

IN THE UNITED STATES DISTRICT COURT FOR THE  
NORTHERN DISTRICT OF OKLAHOMA

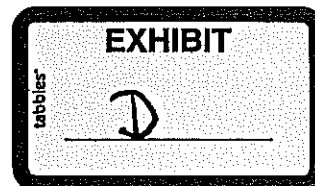
W.A. DREW EDMONDSON, in his )	
capacity as ATTORNEY GENERAL )	
OF THE STATE OF OKLAHOMA and )	
OKLAHOMA SECRETARY OF THE )	08:33
ENVIRONMENT, C. MILES TOLBERT) )	08:33
in his capacity as the )	
TRUSTEE FOR NATURAL RESOURCES) )	
FOR THE STATE OF OKLAHOMA, )	
)	
Plaintiff, )	
)	
vs. )	4:05-CV-003290-TCK-SAJ
)	
TYSON FOODS, INC., et al., )	08:33
)	08:33
Defendants. )	

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08:33

VIDEO DEPOSITION OF WILLIAM H. DESVOUSGES, Ph.D.,  
produced as a witness on behalf of the Defendants in  
the above styled and numbered cause, taken on the  
14th day of May, 2009, in the City of Tulsa, County  
of Tulsa, State of Oklahoma, before me, Karla E. 08:33  
Barrow, a Certified Shorthand Reporter, duly  
certified under and by virtue of the laws of the  
State of Oklahoma.

08:33



<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p style="text-align: center;"><b>A P P E A R A N C E S</b></p> <p>FOR THE PLAINTIFF: MS. INGRID MOLL  Attorney at Law  20 Church Street 08:33  17th Floor 08:33  Hartford, CT 06103  and  MR. RICHARD GARREN  Attorney at Law  502 West 6th Street  Tulsa, OK 74119</p> <p>FOR CARGILL: MR. COLIN DEIHL  MR. ERIC J. TRIPLETT 08:33  (Via Telephone) 08:33  Attorneys at Law  1700 Lincoln Street  3200 Wells Fargo Center  Denver, CO 80203</p> <p>FOR GEORGES: MR. JAMES GRAVES  (Via Telephone)  Attorney at Law  221 North College 08:33  Fayetteville, AR 72701 08:33</p> <p>FOR PETERSON FARMS: MR. PHILIP HIXON  Attorney at Law  320 South Boston  Suite 700  Tulsa, OK 74103</p> <p>ALSO PRESENT: Dr. Michael Hanemann  VIDEOGRAPHERS: Opveon 08:33</p> <p style="text-align: center;">2</p>	<p>(Whereupon, the deposition began at 8:39 a.m.)</p> <p>VIDEOGRAPHER: We are now on the record for the deposition of Dr. William Desvousges. Today is May 14th, 2009. The time is 8:34 a.m. Counsel, 08:39 please identify yourselves for the record.</p> <p>MS. MOLL: Ingrid Moll on behalf of the State of Oklahoma.</p> <p>MR. DEIHL: Colin Deihl on behalf of Cargill. 08:39</p> <p>MR. HIXON: Philip Hixon on behalf of Peterson Farms.</p> <p>VIDEOGRAPHER: You may swear in the witness.</p> <p>WILLIAM H. DESVOUSGES, Ph.D., 08:39  being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:</p> <p style="text-align: center;">DIRECT EXAMINATION</p> <p>BY MS. MOLL: 08:39</p> <p><b>Q Good morning, Dr. Desvousges.</b></p> <p>A Good morning.</p> <p><b>Q My name is Ingrid Moll. I'm here on behalf of the State of Oklahoma. Would you kindly state your name for the record?</b> 08:39</p> <p style="text-align: center;">4</p>														
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p style="text-align: center;"><b>I N D E X</b></p> <table> <tr> <th>WITNESS</th><th>PAGE</th></tr> <tr> <td>WILLIAM H. DESVOUSGES, Ph.D.</td><td></td></tr> <tr> <td>Direct Examination by Ms. Moll</td><td>4 08:33</td></tr> <tr> <td></td><td>08:33</td></tr> <tr> <td>Signature Page</td><td>218</td></tr> <tr> <td>Reporter's Certificate</td><td>219</td></tr> <tr> <td></td><td>08:33</td></tr> </table> <p style="text-align: center;">3</p>	WITNESS	PAGE	WILLIAM H. DESVOUSGES, Ph.D.		Direct Examination by Ms. Moll	4 08:33		08:33	Signature Page	218	Reporter's Certificate	219		08:33	<p>A Sure. William Harold Desvousges.</p> <p><b>Q And would you give me your work and home addresses, please?</b></p> <p>A Okay. My work address is 700 Exposition Place, Suite 141, that's in Raleigh, North Carolina 08:40 27615. Do you want my home – physical home address or my mailing address because it's a little tricky right now in terms of where mail goes or where we're physically –</p> <p><b>Q Your physical home address, please.</b> 08:40</p> <p>A Okay. All right. 7824 Harps, H-A-R-P-S, Mill Road, and that's also in Raleigh, and this is 27615.</p> <p><b>Q Okay. And what e-mail addresses do you use?</b></p> <p>A William.Desvousges@whdesvousgesassociates.com, and that's my main e-mail address. 08:40</p> <p><b>Q Okay.</b></p> <p>MR. DEIHL: For the record, I'm getting e-mails that people can't call in, so I'm going to try a different access code, if I can just take a moment. 08:41</p> <p>MS. MOLL: Let's go off the record.</p> <p>VIDEOGRAPHER: We're off the record, 8:36 a.m.</p> <p>(Whereupon, a discussion was held off the record.) 08:41</p> <p style="text-align: center;">5</p>
WITNESS	PAGE														
WILLIAM H. DESVOUSGES, Ph.D.															
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1 VIDEOGRAPHER: We are back on the record,  
2 8:38 a.m.  
3 **Q (By Ms. Moll) Dr. Desvousges, you mentioned**  
4 **your work e-mail address.**  
5 A That's correct. 08:42  
6 **Q What are your personal e-mail addresses?**  
7 A Wdesvousges@aol.com.  
8 **Q Did you use that e-mail address for the**  
9 **purpose of any work that you've done on the State of**  
10 **Oklahoma versus Tyson matter?** 08:43  
11 A No.  
12 **Q Okay. How many times have you been deposed?**  
13 A Gosh, it's on my resume, at least 10 times,  
14 probably 15.  
15 **Q Okay.** 08:43  
16 A Maybe even 20, somewhere in that ballpark.  
17 **Q Okay. And how about trial testimony?**  
18 A I've testified in federal court once. I've  
19 testified in some administrative hearings three  
20 times. 08:43  
21 **Q And are those also identified on your resume?**  
22 A Yes, those are also on my resume.  
23 **Q Okay. What did you do to prepare for your**  
24 **deposition today?**  
25 A Reread my expert report of Dr. Rausser and my 08:43

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1 expert -- for today's -- okay if I just call it my  
2 expert report?  
3 **Q Yes, that's fine.**  
4 A Just a simple thought. I mean, it's obviously  
5 both of our expert's reports. I reread my expert 08:44  
6 report. Looked through some articles, supporting  
7 articles and documents and materials that were  
8 produced as part of our considered by materials, and  
9 met with counsel.  
10 **Q When did you meet with counsel?** 08:44  
11 A I met with counsel in Denver last week right  
12 after -- the day after Dr. Hanemann's deposition,  
13 whatever day that was, and then we met last night  
14 for dinner.  
15 **Q Okay. When you met with counsel in Denver,** 08:44  
16 **who was there?**  
17 A Mr. Deihl and Mr. Triplett.  
18 **Q Is that it?**  
19 A Yes.  
20 **Q Did anyone participate by phone?** 08:44  
21 A No. Dr. Rausser did a couple of times, we had  
22 a few questions, but no other attorneys.  
23 **Q Did you read any deposition transcripts in**  
24 **preparation for today?**  
25 A I've read a lot of deposition transcripts over 08:45

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the course of the -- of the last week, so I guess  
yes, but not specifically to prepare for today.  
**Q Okay. Which deposition transcripts have you**  
**read?**  
A I have read Dr. Krosnick's, Tourangeau's, 08:45  
Chapman's, Dr. Bishop's, and some of Dr. Morey's. I  
have not read Dr. Hanemann's.  
**Q How many hours have you spent preparing for**  
**your deposition today?**  
A Twenty-five to 30 maybe, somewhere in that 08:45  
ballpark.  
**Q Okay. Dr. Desvousges, I'm handing you what's**  
**been marked as Exhibit No. 1. Do you recognize this**  
**document?**  
A Yes, I do. 08:46  
**Q And what is it?**  
A It's a copy of my resume.  
**Q Okay. Is it a current version?**  
A I believe so, but let me check a couple of  
things because I can tell based on looking at a 08:47  
couple of things. Reasonably current. There's an  
article in here that's listed as forthcoming that's  
actually come out in Land Economics.  
**Q If you could point my --**  
A Yes, sure. 08:47

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**Q -- attention --**  
A I'm sorry.  
**Q -- to what you're looking at.**  
A Yes. It's under publications. Unfortunately  
the pages aren't numbered. 08:47  
**Q Okay.**  
A So what is it, about two-thirds of the way  
through.  
**Q I'm with you.**  
A Okay. That publication at the top there, that 08:47  
has come out in Land Economics.  
**Q When was that published?**  
A Sometime -- sometime this year, I believe,  
early this year.  
**Q Are there any other changes to your CV?** 08:48  
A No, I don't believe so.  
**Q Okay. Would you kindly look under the**  
**sections relating to deposition and trial testimony**  
**and just confirm that that's complete?**  
A Sure, be happy to. It may not be, actually, 08:48  
since I had a deposition very recently. Yeah,  
the -- I had a deposition in South Carolina on April  
30th.  
**Q Okay.**  
A Of this year. And that's not listed on my 08:49

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1	resume.		did you do there?	
2	<b>Q Do you know the case name of that matter?</b>		A Yeah. I did a lot of applied environmental	
3	A It's Dataw Island Owners -- Dataw Island		and natural resource economics. I did various	
4	Property Owners' Association, Dataw Island Owners'		studies on a lot of different topics, different	
5	Association versus some specific plaintiffs, and 08:49		kinds of valuation studies. I also did some natural 08:53	
6	it's in Charleston, or Buford, South Carolina,		resource damage assessment work while I was at	
7	technically.		Research Triangle Institute. Those are probably the	
8	<b>Q And on whose behalf were you offering</b>		two main areas. I did a little bit of work for EPA	
9	<b>deposition testimony?</b>		on a few things on some -- not related to valuation,	
10	A On behalf of the plaintiffs. 08:50		but by and large, it was valuation and related 08:53	
11	<b>Q And you've been retained in that matter as an</b>		issues.	
12	<b>expert?</b>		<b>Q Now, I understand that you have, in the course</b>	
13	A Yes, I have.		<b>of your career, done some work for the Exxon</b>	
14	<b>Q And what is the general subject matter of that</b>		<b>Corporation; is that right?</b>	
15	<b>case? 08:50</b>		A Yes, that's correct. 08:53	
16	A It involves the estimation of property damages		<b>Q Okay. And when did that work first begin?</b>	
17	from a tie-in arrangement that was put in place		<b>When was your first retention?</b>	
18	where -- that required homeowners to also be members		A It would have been 1989.	
19	of the golf club at this particular Dataw Island,		<b>Q So while you were at the Center for Economic</b>	
20	and this was implemented, I guess, back in 2005, and 08:50		<b>-- Economics Research? 08:53</b>	
21	some property owners filed suit against the --		A That's correct, while I was there.	
22	against the owners' association that implemented the		<b>Q All right. And what did that project entail?</b>	
23	change.		A That project entailed working on the Exxon	
24	<b>Q And have you submitted an expert report in</b>		Valdez oil spill for Exxon.	
25	<b>that matter? 08:50</b>	10	<b>Q And have you worked on other matters on behalf 08:54</b>	12
1	A I have submitted an expert report in that		<b>of the Exxon Corporation?</b>	
2	matter.		A Yes, I have.	
3	<b>Q And in that report, did you present some kind</b>		<b>Q How many projects, approximately?</b>	
4	<b>of valuation model?</b>		A At least four others that I can recall.	
5	A I did a statistical analysis, yes, that -- 08:51		<b>Q Can you identify them for me? 08:54</b>	
6	where I compared the property damages -- property		A Yes. The second case that I worked on for	
7	values before and after the tie-in arrangement on		Exxon was a class action case in South Carolina.	
8	the specific island controlling for other		The Mary Fairey, F-A-I-R-E-Y, versus -- et al versus	
9	characteristics.		Exxon Corporation. And the -- I also worked on a	
10	<b>Q Okay. If you'd turn in your CV, Exhibit 1, 08:51</b>		case in New Jersey for them that was a groundwater 08:55	
11	<b>under your employment chronology, I'd like to focus</b>		case, and it -- that was the State of New Jersey	
12	<b>your attention on the work that you did at the</b>		versus Exxon, et al. In that case there were some	
13	<b>Center for Economics Research.</b>		other oil companies that were also defendants in	
14	A Yes.		that case.	
15	<b>Q Can you tell me generally what kind of outfit 08:52</b>		I am currently working for them on two 08:55	
16	<b>the Center for Economics Research is?</b>		other sites in New Jersey. One is a groundwater	
17	A Sure. It is a center within the Research		case involving the Sayreville site,	
18	Triangle Institute, which is located in Research		S-A-Y-R-E-V-I-L-L-E, and then the other is a natural	
19	Triangle Park, North Carolina. It's a		resource damage claim, excuse me, that's broader	
20	not-for-profit research institute that's owned by 08:52		involving two of their former refineries, the Bayway 08:55	
21	the three area universities there. I started there		and Bayonne Refineries in -- in New Jersey.	
22	in 1980 as a senior economist, and then over the		<b>Q In addition to these five specific litigation</b>	
23	course of time, became a program director and a		<b>matters that you've identified, have you done</b>	
24	senior program director before I left the company.		<b>consulting work on behalf of Exxon over the years?</b>	
25	<b>Q And what -- just generally, what kind of work 08:52</b>	11	A Occasionally I have been asked to -- to do a 08:56	13

<p>1 small project here and there, but not very often.</p> <p>2 <b>Q And can you identify those for me?</b></p> <p>3 A Yes. The one that I specifically remember is</p> <p>4 one where I was asked to take some time and look at</p> <p>5 some of the literature related to contingent 08:56</p> <p>6 valuation. This would have been in probably 2005.</p> <p>7 They asked me to simply go back and look at the</p> <p>8 literature since the work that had been done for</p> <p>9 them in the early '90s and just provide a summary of</p> <p>10 what articles had appeared in the literature 08:57</p> <p>11 involved.</p> <p>12 <b>Q Are there any other consulting projects that</b></p> <p>13 <b>you can think of?</b></p> <p>14 A Not that I specifically recall. That's the</p> <p>15 one that I do specifically recall. 08:57</p> <p>16 <b>Q Okay. This literature that — literature</b></p> <p>17 <b>review on CV that you did in around 2005, did that</b></p> <p>18 <b>result in a published article?</b></p> <p>19 A No, it did not. They simply wanted me to put</p> <p>20 together, you know, a couple of tables and a memo 08:57</p> <p>21 summarizing, you know, what's appeared in the</p> <p>22 published literature, and that's — that was all</p> <p>23 I — that was all I was asked to do.</p> <p>24 <b>Q Okay. The class action that you mentioned in</b></p> <p>25 <b>South Carolina, what time period are we talking 08:58</b></p> <p style="text-align: center;">14</p>	<p><b>Q Okay. Did you offer deposition testimony or</b></p> <p><b>trial testimony in that matter?</b></p> <p>A I gave deposition testimony. I believe that</p> <p>should be on my list.</p> <p><b>Q Okay. And the matter in New Jersey from 2005, 09:00</b></p> <p><b>did you submit an expert report there?</b></p> <p>A Yes, I did.</p> <p><b>Q Has that matter resolved?</b></p> <p>A I think so. There was a ruling by the trial</p> <p>court judge where she threw out the formula that the 09:00</p> <p>state was using to try to measure groundwater</p> <p>damages, and I don't believe that the — I don't</p> <p>recall whether the state has repealed that judgment</p> <p>or not. They may have. I'm not sure.</p> <p><b>Q And how about the two current matters, have 09:00</b></p> <p><b>you submitted an expert report in either of those</b></p> <p><b>matters?</b></p> <p>A One of those matters.</p> <p><b>Q Which one?</b></p> <p>A The Bayway, Bayonne matter. That's a 09:01</p> <p>confidential sealed case. All the documents in</p> <p>that -- in that matter have been sealed by the</p> <p>court.</p> <p><b>Q Okay. Going back to the South Carolina matter</b></p> <p><b>for Exxon, did you do a valuation model in that 09:01</b></p> <p style="text-align: center;">16</p>
<p>1 about?</p> <p>2 A 2000 and — that's a little harder. 2002,</p> <p>3 maybe, 2003, somewhere in that time frame.</p> <p>4 <b>Q And how about the groundwater matter in New</b></p> <p>5 <b>Jersey? 08:58</b></p> <p>6 A That was two or three years ago.</p> <p>7 <b>Q And you mentioned there are two current</b></p> <p>8 <b>litigation matters that you're working on?</b></p> <p>9 A Yes, I did.</p> <p>10 <b>Q Okay. Now, the — have you submitted an 08:58</b></p> <p>11 <b>expert report in the South Carolina matter?</b></p> <p>12 A South Carolina's sometimes a little -- we're</p> <p>13 speaking about the Exxon, South Carolina matter; is</p> <p>14 that correct?</p> <p>15 <b>Q Correct. 08:59</b></p> <p>16 A Okay. Sometimes there are expert reports and</p> <p>17 sometimes there are not. In that particular matter,</p> <p>18 I provided a couple of notebooks that had a series</p> <p>19 of analyses that I had performed, and -- but there</p> <p>20 was really nothing that was a formal report, per se. 08:59</p> <p>21 Neither side's experts had formal reports. Each</p> <p>22 side provided some documents, but nothing that was</p> <p>23 kind of signed as a formal expert report.</p> <p>24 <b>Q And has that matter resolved?</b></p> <p>25 A Yes, it has been resolved. 09:03</p> <p style="text-align: center;">15</p>	<p>case?</p> <p>A No, I did not.</p> <p><b>Q And what about the 2005 groundwater matter in</b></p> <p><b>New Jersey?</b></p> <p>A I didn't have a specific model that I used. I 09:01</p> <p>did use some basic economic principles to evaluate</p> <p>the state's formula, and I did reach some</p> <p>conclusions, but I didn't have a model, per se, in</p> <p>that document.</p> <p><b>Q And then the two current matters, have you 09:01</b></p> <p><b>used any valuation models in those matters?</b></p> <p>A Well, the one current matter is ongoing, and</p> <p>it's not reached that stage.</p> <p><b>Q Okay.</b></p> <p>A The other matter, I did use a valuation model. 09:02</p> <p><b>Q And you're referring to the Bayway —</b></p> <p>A The —</p> <p><b>Q -- Bayonne case?</b></p> <p>A Yes, the Bayway, Bayonne case, I'm sorry, yes.</p> <p><b>Q And which valuation model did you use? 09:02</b></p> <p>A Habitat equivalency analysis.</p> <p><b>Q Anything else?</b></p> <p>A In that case?</p> <p><b>Q Yes.</b></p> <p>A No. 09:02</p> <p style="text-align: center;">17</p>

1	<b>Q Can you identify for me, over the course of</b>	A I'm going on to the previous page.
2	<b>your career, the contingent valuation studies that</b>	<b>Q Uh-huh.</b>
3	<b>you have participated in?</b>	A And I'm looking at Information, Risk
4	A I can try.	Perception and Mitigation: Behavioral Responses to
5	<b>Q Do your best. 09:02</b>	Environmental Risk for the National Science 09:05
6	A Okay. I'm going to take a second and look --	Foundation. I think that's it.
7	<b>Q That's fine.</b>	<b>Q So let's take the CV work that you did in the</b>
8	A -- look at my resume, if that's all right. I	<b>National Science Foundation --</b>
9	may be able to get it here from the list of	A Uh-huh.
10	projects, I think. Could you clarify what you 09:03	<b>Q -- matter. On whose behalf were you doing the 09:06</b>
11	include by contingent valuation for me, please?	<b>work?</b>
12	<b>Q I guess I'm separating contingent valuation</b>	A The National Science Foundation. It was a
13	<b>from conjoint.</b>	grant that -- it was given to John Payne and David
14	A Okay, you are.	Schkade, S-C-H-K-A-D-E, and myself at Duke
15	<b>Q And I'll get to conjoint when we complete -- 09:03</b>	University. David was on leave at Duke. John is an 09:06
16	A Thank you for clarifying that.	assistant dean of the business school at Duke
17	<b>Q Sure.</b>	University, and we received a grant that was kind of
18	A Okay. The project that I did for the	a combination EPA/NSF grant. EPA -- they were doing
19	Environmental Protection Agency, a comparison of	it jointly. And so that -- we developed some
20	benefit estimation approaches involved a contingent 09:03	alternative -- we were doing some methodological 09:07
21	valuation study as one -- one aspect of what we did.	testing with contingent valuation as part of that
22	<b>Q And are you referring to a specific project on</b>	grant.
23	<b>your CV?</b>	<b>Q In what time frame did that work occur?</b>
24	A Yeah, I am. It's on maybe the third or fourth	A It would have overlapped with the '96 to '99
25	page, fourth page in. I'm starting at the beginning 09:04	that's on my resume with the research professor at 09:07
	18	20
1	and working my way forward.	Duke University.
2	<b>Q Okay.</b>	<b>Q What was your role in that study?</b>
3	A The next project up involved a couple of	A I was one of three -- one of the three
4	questions that were contingent valuation questions	principal investigators. My responsibility was
5	within it. That's the Evaluating Risk of a 09:04	really two parts. One was to participate with John 09:08
6	High-Level Nuclear Waste Repository for the State of	and David on developing the ideas of what we were
7	Nevada.	going to try to do and how we were going to try to
8	<b>Q Give me a moment when I find where you are.</b>	do it, and then I also oversaw the implementation of
9	A Sure. Sorry. It's -- I'm on the same page,	the actual survey work that we did. We -- we had a
10	I'm just moving up one. 09:04	subcontract to my company, and so they asked me to 09:08
11	<b>Q Okay.</b>	stay on top of all the activities that a couple of
12	A Sure.	staff members were doing there at Triangle Economics
13	<b>Q Since they're not numbered, it's a little</b>	Research. That work would have been done after I'd
14	<b>difficult.</b>	left RTI.
15	A Yeah, I'm sorry, I'm just moving up one 09:04	<b>Q Okay. And did that study measure use values? 09:08</b>
16	bullet. I haven't changed pages. So -- it's easier	A That study really was focused on doing
17	to look at the bullets than it is to look at the	methodological work related to how people form
18	full list of projects.	nonuse values.
19	<b>Q Yes. I'm with you now.</b>	<b>Q And did that study result in any published</b>
20	A Okay. 09:04	<b>articles? 09:09</b>
21	<b>Q Go ahead.</b>	A Yes, it did.
22	A Sorry. Evaluate -- Valuing Reductions in	<b>Q Okay. Can you identify those for me?</b>
23	Hazardous Waste Risks for the Office of Policy	A There's an article on my resume, it's at the
24	Analysis.	top of -- it's at the top of the page, the second
25	<b>Q Uh-huh. 09:05</b>	page of publications, you see where it starts 09:09
	19	21



1	publications, it's the second page.		they're dealing with uncertainty, are trying to	
2	<b>Q The first article on that page?</b>		measure something that involves expected utility,	
3	A Yes, that's correct, and you can see that		because there's uncertainty in there that you don't	
4	the -- do you want me to identify the article?		know exactly what's going to happen, so we think	
5	<b>Q Just so the record is clear, yes, please.</b>	09:10	people are going to try to maximize their expected	09:13
6	A Sure. The article is Payne J.W., D.A.		utility in that instance. So we went through a	
7	Schkade, W.H. Desvousges and C. Aultman,		series of focus groups, one-on-one interviews,	
8	A-U-L-T-M-A-N, 2000, Valuation of Multiple		pretests, pilot tests, and ultimately the full scale	
9	Environmental Programs, Journal of Risk and		survey.	
10	Uncertainty, Volume 21, No. 1, Pages 95 to 115.	09:10	<b>Q What time frame was this work done?</b>	09:14
11	<b>Q Okay. Going back to the CV studies that you</b>		A Let me look and see.	
12	<b>identified earlier in your vita, the one that's</b>		<b>Q Okay.</b>	
13	<b>identified as Valuing Reductions in Hazardous Waste</b>		A It was -- I believe in the mid '80s. I may be	
14	<b>Risks, can you tell me about that CV study?</b>		able to get closer than that if the mid '80s isn't	
15	A Yes. That one was done while I was still at	09:10	good enough.	09:14
16	Research Triangle Institute. I was working as a		<b>Q Mid '80s is fine.</b>	
17	co-principal investigator with Kerry Smith and Rick		A Okay, mid '80s.	
18	Freeman, my Rick Freeman, and we had a grant -- we		<b>Q Did that work result in any published</b>	
19	had what at the time was called a cooperative		<b>articles?</b>	
20	agreement with the Environmental Protection Agency	09:11	A Yes, it did.	09:14
21	that was given to Vanderbilt University where Kerry		<b>Q Can you identify those for me?</b>	
22	was at the time, and then there was a subcontract		A Yes, I can. There are quite a few. The first	
23	from Vanderbilt to me, and then I believe Rick also		one appears on -- gosh, I wish -- I should have	
24	had some kind of consulting or subcontracting		numbered the pages here in my vita, two, three, I	
25	arrangement to Vanderbilt as part of that work. And	09:11	think it's the fourth page, starting at	09:15
	22		24	
1	RTI also -- I guess technically -- let me just think		publications.	
2	for a second. We actually -- RTI actually		<b>Q Okay.</b>	
3	participated in that work, not as a subcontractor,		A Going back. Do you see an article in there,	
4	because we were a not-for-profit institution. The		1986, on The Value of Avoiding a LULU, do you see	
5	cooperative agreement actually was a joint	09:12	that?	09:16
6	cooperative agreement, so I don't want to misspeak.		<b>Q I do.</b>	
7	Kerry and I and Rick developed a CV questionnaire		A I believe that that's the first one that came	
8	that we administered in the greater Boston area to a		out as a result of the work that we did. Do you	
9	sample of households.		want me to identify that for the record again?	
10	<b>Q And what were you seeking to measure there?</b>	09:12	<b>Q No, that's fine.</b>	09:16
11	A We were trying to understand how people		A Okay.	
12	respond to economic questions that involve		<b>Q If you could identify the other articles</b>	
13	uncertainty. And as a result of that, we developed		<b>pertaining to that.</b>	
14	a pretty elaborate experimental design where we		A Sure. We can just move up --	
15	randomly assigned people different levels of	09:13	<b>Q Okay.</b>	09:16
16	baseline risk, and then we also randomly assigned		A -- the one article then to Smith and	
17	different levels of -- different starting points for		Desvousges, Asymmetries in the Valuation for Risk	
18	those baseline risks, and we had several other		Reduction. Then we can skip a couple and then go up	
19	aspects to the design, but that was the basic		to An Empirical Analysis of the Economic Value of	
20	design. We were interested in trying to see whether	09:13	Risk Changes in '87.	09:16
21	people could answer questions in the way that		<b>Q Uh-huh.</b>	
22	economists assume that they're going to answer		A There's -- oh, there's a conceptual article	
23	questions involving uncertainty. Whether or not we		that appeared in 1988 there with Smith and	
24	would get responses that corresponded to what's		Desvousges at the top of that page.	
25	called expected utility. Economists, usually, when	09:13	<b>Q Okay.</b>	09:17
	23		25	

<p>1 A That was done when we were working on that 2 cooperative agreement. And then there's one more 3 article that's on the previous page. There is Smith 4 and Desvousges that's the Subjective Versus 5 Technical Risk -- no, excuse me, I'm sorry, I went 09:17 6 up one too high. Desvousges and Smith this time, 7 Focus Groups and Risk Communication, that particular 8 piece. That's the last one that came out of that 9 research that I recall.</p> <p>10 <b>Q Okay. I'd like to move on then to the CV 09:17</b> 11 <b>study relating to your work entitled Evaluating Risk</b> 12 <b>of a High-Level Nuclear Waste Repository.</b></p> <p>13 A Sure.</p> <p>14 <b>Q Who was your client?</b></p> <p>15 A State of Nevada. 09:18</p> <p>16 <b>Q When was that work done?</b></p> <p>17 A That was also mid '80s, roughly, mid 1980s.</p> <p>18 <b>Q And tell me briefly about that study.</b></p> <p>19 A Yes. This was a multidisciplinary team that 20 the State of Nevada formed. It involved Howard 09:18 21 Kunreuther, K-U-N-R-E-U-T-H-E-R, at the University 22 of Pennsylvania, Paul Slovic, S-L-O-V-I-C, at -- at 23 least at that time at Decision Research and the 24 University of Oregon, Jim Frey, F-R-E-Y, at the 25 University of Nevada Las Vegas, myself, and there 09:18 26</p>	<p>elicit information about willingness -- willingness to pay.</p> <p><b>Q And were you measuring use values in that study?</b></p> <p>A It's been long enough now that I don't 09:20 specifically remember.</p> <p><b>Q Okay. So you don't remember measuring nonuse values either?</b></p> <p>A I'd -- I'd have to look back at that particular question to recall exactly what we were 09:21 measuring there. Some of the studies I remember better than others.</p> <p><b>Q Okay. Were there any published articles that resulted from that study?</b></p> <p>A There are a couple of published articles that 09:21 came from that study.</p> <p><b>Q Could you identify those for me, please?</b></p> <p>A Yes, I can. There are three of them. The first one appeared in 1988, so it's down at the bottom of Page 3 of the publications; do you see 09:21 that?</p> <p><b>Q I do.</b></p> <p>A Kunreuther, Desvousges and Slovic that came out in Environment. Then the next one is -- moving up three or four, depending on how you count, with 09:22 28</p>
<p>1 were maybe another half a dozen principal 2 investigators. This was a big team. But the main 3 people that I -- those are the main people that I 4 worked with in doing this work. There were -- the 5 team probably included like maybe eight to 12 09:19 6 people. It was a very large team.</p> <p>7 MR. DEIHL: Ingrid, I don't know if anyone 8 else is having difficulty hearing, but I am, 9 particularly with the typing that Dr. Hanemann is 10 doing. I'd ask that he please try to refrain from 09:19 11 typing so loudly because it's really preventing me 12 from concentrating on the deposition.</p> <p>13 <b>Q (By Ms. Moll) What were you attempting to</b> 14 <b>measure in that study?</b></p> <p>15 A The main focus of that study was to understand 09:19 16 people's risk perceptions and factors that influence 17 their risk perceptions, and -- so that a lot of the 18 questions that were in the questionnaire really 19 focused on trying to understand and come up with 20 some different metrics to try to gauge risk 09:20 21 perceptions related to the potential siting of this 22 high-level nuclear waste repository in the state of 23 Nevada. And then there were -- there were two 24 questions included in this long survey questionnaire 25 that elicited some information about -- attempted to 09:20 27</p>	<p>Jim Frey, J.H. Frey in '89 there; do you see that? Integrating Focus Groups in Surveys, Examples from Environmental Risk Studies, that paper. And then there's another paper that appeared, on that same page, in 1990 with Howard Kunreuther again, Paul 09:22 Slovic and Doug Easterling in 1990, and that one appeared in Risk Analysis, and that was more Public Attitudes Toward Siting of High-Level Nuclear Waste Repository.</p> <p><b>Q And I'm sorry, the year of that article was 09:22</b> <b>what?</b></p> <p>A 1990. Sorry.</p> <p><b>Q Okay. Any others?</b></p> <p>A Not from that work, no.</p> <p><b>Q And then how about the fourth CV study that 09:23</b> <b>you identified earlier, describe that study for me.</b> <b>And specifically, I'm referring to a comparison of</b> <b>benefit estimation approaches.</b></p> <p>A Okay. Thank you. I appreciate that. That -- that study was a -- done for the Environmental 09:23 Protection Agency. It was focused on -- literally, the title was -- pretty well sums up what the study was about. Our goal was to compare different approaches for estimating water quality benefits, and as part of that work, we implemented multiple 09:23 29</p>



1 versions of a contingent valuation question. I'm  
2 trying to remember. I think we even had a  
3 contingent ranking question in that survey, as well,  
4 where people ranked different combinations of water  
5 quality and option prices, and we had -- collected 09:24  
6 data on people's recreation behavior in, around,  
7 near the Monongahela River, as well as other  
8 substitute rivers. So it was essentially focused on  
9 gathering the information so that we could implement  
10 these various approaches, and then compare the 09:24  
11 relative performance of those approaches.

12 **Q Okay. So were you measuring use values in**  
13 **that study?**

14 A We were measuring use values, as well -- use  
15 values were a large component of what we were 09:24  
16 measuring. Specifically, what we asked people to do  
17 was to give us a measure of option price, and this  
18 really involved their actual use, as well as their  
19 potential future use. So it was current use, as  
20 well as potential future use, so it was use values 09:25  
21 plus, I guess would be one way to describe what we  
22 were measuring there.

23 **Q Okay. Were you attempting to measure anything**  
24 **else than what you just described?**

25 A We had one more question in the survey that 09:25  
30

with their use value. We were having a hard time  
trying to disentangle it from their use and possible  
future use, and this was attempted to be a question  
that was only existence value, and the wording was  
such that some people gave the same answer, even 09:27  
though they were a current user. So there were just  
some -- as we went -- and then when we debriefed our  
interviewers, it was real clear that people were  
having a hard time answering that question. So the  
researchers, myself, Kerry Smith and Anne Fisher, 09:27  
even though she was the project manager, she was  
also a researcher, decided that we would not try to  
report those numbers, and so we focused on the other  
estimates from the study.

**Q Okay. Did you do focus groups in that study?** 09:27

A We did not. At that particular point in time,  
no one had done focus groups.

**Q Did you do one-on-one interviews prior to the**  
**main survey?**

A Yeah, I'll have to think about that a second. 09:28  
We did an early version of one-on-one interviews  
relative to the later version that evolved.

**Q And when you say early version, you mean of**  
**the survey questionnaire?**

A No, no, I'm sorry, that was a bad answer. Let 09:28  
32

1 attempted to try to measure existence values that we  
2 never used because it basically didn't work. There  
3 were some problems in the wording of the question,  
4 and some of our -- some of our respondents  
5 interpreted it one way and others interpreted it a 09:26  
6 different way, and so we ended up never using that  
7 particular question.

8 **Q And just so I understand, when you say you**  
9 **didn't end up using that question, do you mean in**  
10 **the final survey?** 09:26

11 A We used it in the final survey, we just never  
12 reported it anywhere other than in the final report,  
13 and in the final report we acknowledged that there  
14 was this problem with the question and that you  
15 couldn't really reliably interpret the responses to 09:26  
16 that question from that survey.

17 **Q Okay. And what did you conclude to be the**  
18 **problem with the question?**

19 A The wording.

20 **Q What specifically --** 09:26

21 A Oh, gosh.

22 **Q -- about the wording, if you recall?**

23 A I don't recall. There was some issues -- what  
24 I do recall is that there were some issues for some  
25 people as to whether -- some people got it mixed up 09:26

31

me try to be clear. We did some one-on-one  
interviews, but they were not -- and they were with  
a draft survey questionnaire, but they were more  
informal in the sense that we did them with subjects  
who were not in the area. So essentially, we were 09:28  
doing the one-on-one interviews in the Research  
Triangle area, and so we did -- we had a couple of  
people actually who were from the Pittsburgh area so  
we did it with them, and then we did it with just a  
couple of other employees. This was a very modest 09:29  
level of one-on-one interviews compared to the scope  
of what we did in the Boston hazardous waste study  
where we did extensive one-on-one interviews.

**Q So these subjects who participated in the**  
**one-on-one's, were they employees or students or who** 09:29  
**were these --**

A They were actually employees of RTI of one  
type or another.

**Q And then the questionnaire that was used in**  
**the final survey, was that pretested?** 09:29

A Yes, it was.

**Q And tell me about that process.**

A It was pretested in -- in the actual -- in the  
Pittsburgh area, the greater Pittsburgh area, it was  
really the five county area around Pittsburgh. 09:30

33

<p>1 We -- we retained two or three of the interviewers 2 that we were ultimately going to use in the survey. 3 We brought them on board earlier and I'm -- I can't 4 remember if our survey research manager went up for 5 that and oversaw the pretest, I don't believe that 09:30 6 he did. I think that a simply -- what we did was to 7 send the questionnaire to these two or three 8 interviewers that had -- our survey manager had 9 worked with before in that area who were very 10 experienced interviewers, and we sent them the 09:31 11 questionnaire, and we went through it with them over 12 the telephone and got them comfortable with what 13 they were going to do. They then went out and 14 administered the questionnaire as a pretest to, I 15 can't remember, 10, 15, 20 people, it wasn't a real 09:31 16 large pretest, it was a pretty modest pretest by 17 standards that were done later, and then they came 18 back and reported back to us their -- you know, 19 their experiences in trying to do these interviews. 20 And then we modified the questionnaire based -- 09:31 21 based on those. 22 <b>Q Is this study referred to as the Monongahela</b> 23 <b>study?</b> 24 A Yeah. Very good. 25 <b>Q I practiced.</b> 09:31</p> <p style="text-align: center;">34</p>	<p>A Sure. The first paper that appeared -- now, let me try to -- do you want only the papers that came out -- do you want all the papers from the research? <b>Q Yes, please.</b> 09:33 A Okay. Thank you. The first paper that came out was the Smith, Desvousges and McGivney paper, The Opportunity Cost of Travel Time. The next -- moving up one, the Smith, Desvousges and McGivney '83 also, the Estimating Water Quality Benefits. 09:33 Move up one more. Desvousges, Smith and Fisher, Estimates of the Option Values for Water Quality Improvements. Okay. We can move now to the page before it. There -- there were a couple of papers that we wrote that were somewhat spin-offs from that 09:34 research that Kerry and I wrote, that Kerry Smith and I wrote that are down -- two of them down at the bottom of the page in '84 and '85 that were follow-up work that we did right after that grant, so I don't know whether you want to count those or 09:34 not, but that's the Measuring the Benefits of Water Quality Improvements: Additional Considerations, and then the generalized Travel Cost Model and Water Quality Benefits: A Reconsideration, this is Kerry, of course. And then the next paper up is clearly 09:34</p> <p style="text-align: center;">36</p>
<p>1 A Yeah. It's one of those select Desvousges. 2 It's a test question to see whether or not you can 3 say Monongahela. I had a hard time learning, as 4 well. Yes, it is, it's the Monongahela study. 5 <b>Q In what time frame was that study done?</b> 09:31 6 A 1981, '82 time frame, early '80s, 7 specifically. 8 <b>Q And where were you at the time? Forgive me.</b> 9 A I was at Research Triangle Institute. 10 <b>Q Were there any published articles that came</b> 09:32 11 <b>out of that study?</b> 12 A Oh, yes. 13 <b>Q Can you identify those for me?</b> 14 A Yes, I can. All right. We're going to go to 15 the last page of publications, and we're going to 09:32 16 kind of work our way from there, but kind of go 17 forward from there, if that's okay with you. 18 <b>Q Give me one moment.</b> 19 A Yeah, sure. It's the page that has also 20 selected reports and working papers on it. That may 09:32 21 make it easier to find. Those are down -- there's 22 two of those down at the bottom. 23 <b>Q Okay.</b> 24 A Do you have that now? 25 <b>Q I do.</b> 09:33</p> <p style="text-align: center;">35</p>	<p>from that work, and that's the Smith, Desvousges and Fisher '86 paper, A Comparison of Direct and Indirect Methods. And do you want our book? <b>Q Sure.</b> A Okay. Kerry and I then wrote a book in '86 09:35 that you see in kind of the middle of the page there, Measuring Water Quality Benefits, and then there's one more paper that's right above that, Smith -- excuse me, I get the order right, Desvousges, Smith and Fisher, '87, The Option Price 09:35 Estimates for Water Quality Improvements. <b>Q Okay. Can you identify for me the different</b> <b>conjoint studies that you have participated in?</b> A Yes, I can. I think it's easier to identify those if we go back to the beginning and look at the 09:36 project listing. <b>Q Uh-huh.</b> A Technically, technically, I think, there's -- what I'm trying to do is decide -- there's a kind of -- conjoint is kind of a spectrum of methods that 09:36 some people might label as conjoint. Can I explain what I mean -- <b>Q Sure.</b> A -- and we can -- <b>Q Go ahead.</b> 09:37</p> <p style="text-align: center;">37</p>

1	A You can tell me whether you want those or		Q Uh-huh.	
2	not --		A We did a form of conjoint in that. The	
3	Q Sure.		Estimating the Market for Green Products for Niagara	
4	A -- as part of this. For example, the -- some		Mohawk, that used a form of conjoint. The Wisconsin	
5	people would classify the contingent ranking 09:37		Energy Research Project used a form of conjoint. 09:40	
6	question that we used in the Monongahela study and		Obviously, the one up above it also does since the	
7	in the Boston hazardous waste study as a form of		title of the project is Using Conjoint Analysis to	
8	conjoint. So as part of both of those		Value Health. The Natural Resource Damage	
9	questionnaires, there was one question in there that		Assessment for Lavaca Bay used a form of conjoint.	
10	included a different way of asking the question 09:37		MS. MOLL: I think it's time for a tape 09:40	
11	where people ranked these combinations of		change. I'm getting the signal.	
12	alternatives. Some people might refer to that as		A And I think that's the end of the list.	
13	conjoint, as well. So technically, if you use a		Q Okay.	
14	very broad definition of conjoint, two of the		VIDEOGRAPHER: We are off the record. The	
15	projects that we've talked about also had conjoint 09:37		time is 9:36 a.m. 09:41	
16	questions or a form of conjoint question within		(Following a short recess at 9:41 a.m.,	
17	them.		proceedings continued on the record at 9:46 a.m.)	
18	Q So for purposes of my question --		VIDEOGRAPHER: We are back on the record.	
19	A All right.		The time is 9:42 a.m.	
20	Q -- let's use that definition. 09:38		Q (By Ms. Moll) Dr. Desvousges, before we took 09:46	
21	A All right. That's fine. And there's --		a break, you were identifying for me from your CV	
22	there's -- there's also -- let me try to clarify a		the conjoint studies that you have been involved in;	
23	little bit more, too. I'm sorry to be pedantic, but		is that right?	
24	there's a lot of confusion in the literature.		A Yes, that's correct.	
25	There's also -- there's a different form of 09:38	38	Q Okay. Do you believe that you've identified 09:46	40
1	questions that are kind of stated preference		all of those on your CV?	
2	questions, they're kind of intended behavior, so		A I believe that's right.	
3	they're neither -- they're neither conjoint nor		Q Okay. If you would turn to the page in your	
4	contingent valuation, they're kind of contingent		CV that lists your areas of specialization.	
5	behavior questions, so they kind of fall in between 09:38		A I have it. 09:47	
6	those two. So I'm not going to include those, all		Q Okay. Would you read for me the first item	
7	right?		under property valuation?	
8	Q Uh-huh.		A Yes. Prepared expert report that critiqued	
9	A And then there are some that people, I think		reports provided by the plaintiff's economic experts	
10	today, would probably call just stated preference, 09:38		in a lawsuit alleging groundwater contamination at a 09:47	
11	but that's really, in my mind, that's part of the		Superfund site in the western United States.	
12	broader form of conjoint where people are given		Created a sophisticated hedonic property value model	
13	combinations of different attributes and		demonstrating that Superfund site had no effect on	
14	characteristics, and their -- people then trade off		residential property values.	
15	these different attributes for a particular good. 09:39		Q What case are you referring to there? 09:48	
16	So in my mind, that's a form of conjoint, as well,		A That case is the -- I usually refer to it as	
17	but some people like to call that stated preference.		the South Valley case. That is GE, et al versus the	
18	Q Let's use your definition.		State of New Mexico.	
19	A Okay. Is that all right?		Q When did you submit that report?	
20	Q That's fine. 09:39		A 2002. 09:48	
21	A Okay. With that in mind, now I've got to try		Q And who was your client?	
22	to keep it straight. The Fox River Natural Resource		A General Electric.	
23	Damage Assessment Project that's listed there, kind		Q And in the second sentence of your statement	
24	of maybe a quarter of the way up the page from the		there you say, created a sophisticated hedonic	
25	bottom; do you see that? 09:39	39	property value model; do you see that? 09:48	41

<p>1 A Yes, I do.</p> <p>2 <b>Q In your view, what made your hedonic model</b></p> <p>3 <b>sophisticated?</b></p> <p>4 A There were two parts to the hedonic analysis</p> <p>5 that we did. The primary part was being able to 09:49</p> <p>6 obtain sufficient market transactions data so</p> <p>7 that -- that we were able to have market</p> <p>8 transactions data prior to the Superfund site being</p> <p>9 designated, as well as then after the Superfund site</p> <p>10 was designated. We also were able to time specific 09:49</p> <p>11 things that related to some public announcements,</p> <p>12 and so as -- so to me, one of the things that was</p> <p>13 sophisticated about it was the design of being able</p> <p>14 to have a pre and post, both in South Valley, as</p> <p>15 well as in a controlled neighborhood in the 09:50</p> <p>16 Albuquerque area. The second part to it was the</p> <p>17 form of the estimation and being able to work with</p> <p>18 Dan McFadden on the estimation of that model.</p> <p>19 <b>Q And what was the market that you used in that</b></p> <p>20 <b>model?</b> 09:50</p> <p>21 A The market was residential property values.</p> <p>22 We had -- there is -- there's actually a designation</p> <p>23 or neighborhood type area called South Valley.</p> <p>24 That's why I call it the South Valley project.</p> <p>25 The -- then there was another neighborhood that I 09:50</p> <p style="text-align: center;">42</p>	<p>airport, they call it the Sunport in Albuquerque.</p> <p>The particular neighborhood, part of the</p> <p>neighborhood is right in the flight path, and so we</p> <p>were able to get some data on the -- the related</p> <p>distance to the decibels with planes landing and 09:53</p> <p>taking off at the Sunport. We also had -- we had a</p> <p>few other characteristics of the property that I</p> <p>don't recall today, but there were maybe a handful.</p> <p><b>Q Okay. Do you recall any environmental quality</b></p> <p><b>variables in that model?</b> 09:53</p> <p>A The -- there was -- there were not any</p> <p>specifically, other than the nature of the design,</p> <p>which the issue in the case was really proximity to</p> <p>the Superfund site and whether or not it had</p> <p>impacted property values relative to the comparison 09:53</p> <p>or control or reference area, whatever we want to</p> <p>use. The air quality and other things were similar</p> <p>between the two areas, so we didn't include specific</p> <p>air quality measures, say, for example, because of</p> <p>that. 09:54</p> <p><b>Q Okay. What analysis was done to conclude that</b></p> <p><b>the air quality was similar?</b></p> <p>A We looked at -- we just -- we looked at the</p> <p>nature of the data that we had and where those were</p> <p>located from each other, and there really wasn't a 09:54</p> <p style="text-align: center;">44</p>
<p>1 don't remember the name of now that we used as an</p> <p>2 comparable neighborhood, so these were all part of</p> <p>3 the greater Albuquerque area, and we had two, both</p> <p>4 the affected area and the controlled area.</p> <p>5 <b>Q And those two areas were within the same</b> 09:51</p> <p>6 <b>metropolitan area?</b></p> <p>7 A Yes, they were both within the same</p> <p>8 metropolitan area, they were.</p> <p>9 <b>Q Do you have a copy of that hedonic model?</b></p> <p>10 A I have a copy of the expert report somewhere 09:51</p> <p>11 from that -- from that project.</p> <p>12 <b>Q Were there any articles that resulted from</b></p> <p>13 <b>your work in that case?</b></p> <p>14 A No, there have not been. There was a draft</p> <p>15 working paper that was prepared that never got- 09:51</p> <p>16 finished, but no formal article, per se.</p> <p>17 <b>Q What variables were included in your model?</b></p> <p>18 A I'm trying to remember that model</p> <p>19 specifically. It's been a while. I remember we had</p> <p>20 some key housing characteristics, like square 09:52</p> <p>21 footage and age. We had some locational variables</p> <p>22 in the model that dealt with, say, the proximity to</p> <p>23 a municipal treatment plant. There was one other</p> <p>24 locational variable -- oh, I know, it's coming back</p> <p>25 now, distance to the Albuquerque Sunport, the 09:52</p> <p style="text-align: center;">43</p>	<p>basis for trying to differentiate between them based</p> <p>on our evaluation.</p> <p><b>Q Did you employ the benchmark method in that</b></p> <p><b>hedonic model?</b></p> <p>A It's hard to benchmark. I usually use the 09:54</p> <p>term reference area or comparison area. Benchmark</p> <p>would be another -- another name to use for that.</p> <p>In a sense, what we were trying to do is to take a</p> <p>reference or benchmark area that was similar to the</p> <p>South Valley area but for its proximity to the 09:55</p> <p>Superfund site, and we compared whether or not there</p> <p>was any statistically different change in the</p> <p>transaction prices, sales prices during this time</p> <p>period before and after the announcement of the</p> <p>Superfund site. 09:55</p> <p><b>Q Okay. If you'll turn back to the page we were</b></p> <p><b>on in your vita. The third item under property</b></p> <p><b>valuation, would you read that for me, please?</b></p> <p>A Critiqued the contingent valuation survey of a</p> <p>plaintiff's expert in a series of lawsuits alleging 09:56</p> <p>property damages caused by a wood treating facility</p> <p>in Mississippi. Demonstrated that the survey is</p> <p>unreliable for use in litigation.</p> <p><b>Q Now, in those cases that you mentioned in that</b></p> <p><b>item, did a court ever determine that the survey was</b> 09:56</p> <p style="text-align: center;">45</p>

<p>1 <b>unreliable for use in litigation?</b></p> <p>2 A They were all settled.</p> <p>3 <b>Q Okay. Under your heading natural resource</b></p> <p>4 <b>damage assessment, if you'll look at the fifth item</b></p> <p>5 <b>there, it says, designed state-of-the-art study to</b> 09:56</p> <p>6 <b>measure potential losses for recreation and</b></p> <p>7 <b>groundwater services. Studies included data</b></p> <p>8 <b>collection protocols and implementation. Do you see</b></p> <p>9 <b>that there?</b></p> <p>10 A Yes, I do. 09:57</p> <p>11 <b>Q What studies do you refer to there?</b></p> <p>12 A The -- there's -- the primary study that fits</p> <p>13 that bullet would be -- there's probably two that</p> <p>14 fit that bullet. The primary one would be the State</p> <p>15 of Montana versus ARCO. We also dealt with -- in 09:57</p> <p>16 the Lavaca Bay damage assessment, there was an</p> <p>17 assessment of groundwater service impacts in that</p> <p>18 case also, as well as recreation. There really --</p> <p>19 the only distinction with Lavaca Bay was that</p> <p>20 the work never proceeded to the point of collecting 09:58</p> <p>21 data because as part of the cooperative assessment,</p> <p>22 we agreed that the only impacts on groundwater were</p> <p>23 in a very limited area underneath the plant, and so</p> <p>24 there really -- as a result of that, there wasn't a</p> <p>25 need to go further than that, whereas in the Montana 09:58</p> <p style="text-align: center;">46</p>	<p>change for the Tulsa area between 2000 and 2006 to</p> <p>see what that was.</p> <p><b>Q And what did you find?</b></p> <p>A I found that it decreased by 2.6 percent</p> <p>over -- over that period. 10:00</p> <p><b>Q And what analysis did you do to arrive at that</b></p> <p><b>finding?</b></p> <p>A I had one of my staff members go to the quick</p> <p>facts from the census and just calculate the</p> <p>difference between -- between those years. 10:01</p> <p><b>Q And from that analyses, what did you infer</b></p> <p><b>from the decline?</b></p> <p>A Yes. Well, one of the -- one of the points</p> <p>that Dr. Hanemann made in his deposition was was</p> <p>that looking at the visitation increases for Lake 10:01</p> <p>Tenkiller, as we did in the report, that we -- you</p> <p>know, that some of those visitation increases for</p> <p>Tenkiller could be explained by increases in</p> <p>population. So since Tulsa is a primary source of</p> <p>where people come from, it's the major metropolitan 10:01</p> <p>area, I thought just a quick look to see whether Dr.</p> <p>Hanemann's hypothesis was going to be true or not.</p> <p>Since population declined during that period, I</p> <p>don't think we can explain that increase as a</p> <p>function of increased population. 10:02</p> <p style="text-align: center;">48</p>
<p>1 case, there was actually data collection based on a</p> <p>2 survey that was done.</p> <p>3 <b>Q Okay. Let me shift gears for a moment. Dr.</b></p> <p>4 <b>Desvousges, what do you plan to testify about in</b></p> <p>5 <b>this case?</b> 09:58</p> <p>6 A I plan to testify about the opinions that are</p> <p>7 expressed in the expert report that Dr. Rausser and</p> <p>8 I co-authored.</p> <p>9 <b>Q Okay. Let me hand you what was marked</b></p> <p>10 <b>yesterday at Dr. Rausser's deposition as Exhibit</b> 09:59</p> <p>11 <b>No. 2. Are the opinions that you intend to testify</b></p> <p>12 <b>about summarized in the beginning?</b></p> <p>13 A Yes, they are.</p> <p>14 <b>Q And does that summary provided in the report</b></p> <p>15 <b>still reflect your opinions in this case?</b> 09:59</p> <p>16 A The summary, as well as the rest of the report</p> <p>17 that go along with the summary.</p> <p>18 <b>Q Have you modified your opinions in any way?</b></p> <p>19 A No.</p> <p>20 <b>Q Is there any additional analysis that you have</b> 09:59</p> <p>21 <b>undertaken in connection with your report with Dr.</b></p> <p>22 <b>Rausser since that report was produced to the State?</b></p> <p>23 A I've done one thing.</p> <p>24 <b>Q What is that?</b></p> <p>25 A Yeah. I looked at the rate of population 10:00</p> <p style="text-align: center;">47</p>	<p><b>Q Okay. Let me hand you what was marked</b></p> <p><b>yesterday as Exhibit 3 from Dr. Rausser's</b></p> <p><b>deposition, and that is a table of contents that he</b></p> <p><b>prepared in connection with your report.</b></p> <p>A Yes, I see that. 10:02</p> <p><b>Q Walk me through your role with respect to each</b></p> <p><b>section of the report and the appendices, please.</b></p> <p>A Do you want to do it on a section by section</p> <p>basis --</p> <p><b>Q Yes, please.</b> 10:03</p> <p>A -- is that the way you want to do it? Okay.</p> <p>The first section is entitled introduction and</p> <p>summary of opinions. That -- my role in that was</p> <p>co-authoring it with Dr. Rausser. I suspect that I</p> <p>probably even did the first draft of that version 10:03</p> <p>somewhere along the line as we were working through</p> <p>this document, and -- but it was -- and essentially,</p> <p>I didn't write the summary of opinions until we had</p> <p>written the rest of the report, and so then I just</p> <p>simply went back and looked at the rest of the 10:03</p> <p>report and tried to think of a way to provide a</p> <p>summary and some context for what we were doing, and</p> <p>then Dr. Rausser then went back and rewrote and</p> <p>edited and revised what I had put together, and then</p> <p>we probably revisited that several times over the 10:03</p> <p style="text-align: center;">49</p>



course of getting that finished. So it was, I'd say, a jointly written process.

Section 2 is the recreation use analysis. That is an area that I took the primary lead for. It involves the use of the intercept data that — 10:04  
survey that Stratus conducted, as well as the telephone survey, as well as other data that we pulled together or assembled on visitation to the Illinois River and Tenkiller Lake. So it — in doing that work, you know, my role was to — to 10:04  
review the information that was available, to then instruct my staff on how I wanted them to pull together that information and organize it in terms of how we were going to use it in the report, and then to supervise what they did, and then help them 10:05  
to write the different components that are contained within there.

Dr. Rausser then reviewed what we had in there and had the -- and may have -- and additionally may have even rewritten some of what's there. I didn't try to track changes as to who was doing what, I just basically go through the report and look at what's there and see what -- the third section is the real estate property values. This is on or surrounding Tenkiller Lake. With that work

And then I -- I reviewed the write-up of that section after Dr. Rausser put together the first draft of that section, and I'm sure -- I also probably -- not probably, I also provided some of the publications that are cited in that section 10:08 because it was something that I had looked at earlier on in the process, so I had them readily available and was available to give them to Dr. Rausser and his staff. I think that's -- is that the kind of detail that you're looking for? 10:08

**O** That's fine.

A Okay.

**Q** Let's go back to Chapter 2 for a moment.

A Sure.

**Q** You talked about your staff pulled some data and you supervised them in that process. Could you identify specifically which staff members worked on Chapter 2?

A Sure. The -- there were -- all three of my staff worked on Chapter 2. The lead, I would say, on Chapter 2 was Holly Michael, M-I-C-H-A-E-L, but Kristi Mathews with one T, and Anne Chance, Anne with an E, also contributed to the work that we did in that section, as well, but Holly was the -- she was the person who had primary responsibility for

my involvement was, I guess, three parts, really. The first part was talking through the design of what we were going to try to do with Dr. Rausser and different ways that we might do it, and what — and the objectives of what we were trying to achieve there, and then he then kind of took the lead based on those conversations and carried out — carried out the analysis specifically.

I was also involved in the selection of Eufaula Lake, and we worked through that selection together. I brought to that discussion some of the information that I had gained from the work that — some of the documents that were underlying the recreation information that was in the previous section where Eufaula was one of the lakes that we included in our analysis. I then reviewed the — some of the statistical analysis, draft statistical analysis as we were going through it that at one point I — there was a new version of the report that was posted on the — inter — on the extranet site that had some preliminary analysis tables in them. We went through those, and I provided some feedback on some suggestions, basically for how we might change a few of the variables in the model and a few minor things like that.

the work that was going on there, but then she -- we -- she worked with other -- my other staff members in getting that work done, as well.

**Q** Okay. Are all three of the individuals employees of your firm, W.H. Desvousges & Associates? 10:09

A Two of the three are. Kristi Mathews is a — she is a consultant that works with me. We've worked together at Research Triangle Institute and Triangle Economics Research, so we go back probably 10:10 15 years. She now is just operating as an independent consultant, so she technically was an independent consultant, but she was — she didn't act any differently than my staff members did.

**Q What is Ms. Michael's background? 10:10**

A Uh-huh. Undergraduate degree in biology, maybe, or biological education. She was a science teacher for a few years before she went back to graduate school to get a master's in economics, and so she has a master's in economics from the University of Maine at Orono, O-R-O-N-O, and she studied under Kevin Boyle at the University of Maine, wrote her master's thesis for Dr. Boyle during the time that she was there. Anne Chance is — has a master's in business administration.



1 undergraduate degree in business, undergraduate  
2 degree from NC State in Raleigh, a master's degree  
3 from Meredith College in Raleigh. Kristi Mathews is  
4 a -- has an undergraduate degree from Alma College  
5 in Michigan, and then has a master's from, I believe 10:11  
6 it's George Mason in the DC -- one of the schools in  
7 the DC area, and I believe it's George Mason. I  
8 haven't looked at that in a while.

9 **Q And how long has Ms. Michael been employed by**  
10 **your firm?** 10:12

11 MR. DEIHL: Object to the form of the  
12 question.

13 A There's -- my firm has been in existence for  
14 roughly three and a half years, and Holly has worked  
15 with me for those three and a half years. She also 10:12  
16 worked with me for probably three or four years when  
17 I was at Triangle Economic Research. So there's two  
18 different tenures that -- that Ms. Michael has  
19 worked with me.

20 **Q Forgive me, how long have you known Ms.** 10:12  
21 **Mathews?**

22 A Ms. Mathews?

23 **Q Yes.**

24 A Twelve, 13 years, something like that, maybe  
25 longer. We've worked together a long time. 10:13

54

**Q -- is that correct?**

A Yes, we did.

**Q Let's go back to Chapter 4.**

A Sure, yeah, I think -- yes, it did.

**Q Okay. Go ahead.** 10:14

A And you want me to give you that kind of  
comprehensive response?

**Q Yes, please.**

A Okay. I wasn't sure if I was being responsive  
to your question or not. Okay. Chapter 3 -- excuse 10:14  
me, Chapter 4 I think is what we're on now; is that  
right?

**Q Yes.**

A Yeah, okay. Chapter 4 is a -- is a fairly  
comprehensive chapter. There's a lot of material 10:15  
that's covered in Chapter 4. The first section of  
that on the bias misleading, factually incorrect  
information, I took the lead on that. I wrote the  
first draft of that and continued to rewrite and  
massage that version over time with -- obviously 10:15  
with Gordon's input and suggestions. The 4.2, as  
it's here on the survey respondents, that was, once  
again, something that -- that I put together the  
pieces that -- what we were going to do as part of  
that, based on my review of the Stratus study. 1 10:16

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1 **Q Did you work with her while you were at**  
2 **Triangle Economics Research?**

3 A Yes, I did, as well as at Research Triangle  
4 Institute, both places.

5 **Q Okay. And how long has Ms. Chance been** 10:13  
6 **employed by your firm?**

7 A Since my firm has been -- at inception.

8 **Q And did you know Ms. Chance prior to that?**

9 A She's my daughter, so yes.

10 **Q Oh, so I guess you did.** 10:13

11 A Yes, I did.

12 **Q Did any of those three individuals participate**  
13 **in other chapters other than Chapter 2?**

14 A Yes.

15 **Q In what way?** 10:13

16 A They contributed to Chapter 4, and to some of  
17 the -- some of the material in Chapter 5, some of  
18 what ultimately became parts of Chapter 5, I guess,  
19 is probably the better way to put it. And they also  
20 worked with me on Chapter 6 and Chapter 7. 10:14

21 **Q Okay. And when you were -- when we were**  
22 **talking earlier about your role in the report, I**  
23 **think your comprehensive answer stopped at**  
24 **Chapter 3 --**

25 A Oh, I see. 10:14

55

think part of that I wrote the first draft, and I  
think part of that Kristi Mathews may have written.  
We probably divided that one up. The hypothetical  
bias section is -- I think fits in that same mode in  
terms of I put together the main points that we were 10:16  
going to cover in there, and Kristi and I probably  
divided up some of the first draft responsibility on  
4.3, and then Gordon weighed in at several different  
points on that. Say, for example, on 432, I did the  
first draft of that. I think Kristi -- I think 10:17  
Kristi did the first draft on the certainty, and I  
think we divided up the hypothetical bias part. The  
validation, I wrote that. The scope test is -- the  
first draft, and then I want to be clear, too, that  
just because I may have put the first draft on 10:17  
paper, there was a lot of back and forth with Dr.  
Rausser as we were going through this process. So  
basically, the first draft was essentially trying to  
get on paper the things that we'd talked about, and  
I -- can I also try to elaborate a little bit about 10:17  
how we started out the process so that it's clear?

**Q Sure.**

A Is that okay? Basically, each one of us had  
read the Stratus study, and we did it independently  
because we didn't want to -- we didn't want -- we 10:18

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<p>1 wanted each one of us to have our own kind of fresh  2 eyes when we went through the study. And after we  3 had done that, I developed some kind of mental notes  4 as I was going through that process, and then we  5 had – Dr. Rausser and I had a conference call where 10:18  6 we went through and exchanged kind of mental notes  7 as impressions, reactions and, you know, and then we  8 talked about kind of comparative advantage that each  9 one of us has in terms of the fact that at the time  10 that we started this, we thought we only had three 10:18  11 more weeks to write the report, then we got an extra  12 month, but when we first got together, we were  13 basically looking at trying to finish it up and  14 write it in three more weeks, and so we really had  15 to try to think about comparative advantage in 10:19  16 terms of trying to get words on paper and to get  17 work done. And so once we put together the overall  18 design, we then talked through who had relative  19 expertise in one aspect or another. Dr. Rausser is  20 a much better econometrician than I am, and so it 10:19  21 made a lot more sense for him to take the lead on  22 the specific econometrics. Once we had talked about  23 the intuition related to some of those econometric  24 issues, that we did that jointly, and the same with  25 the survey issues, that it made more sense for me to 10:19  58</p>	<p>we provided that data to Dr. Rausser on our extra –  excuse me, our extranet site. But, you know, we had  essentially, together, had talked through that, and  then we provided the data, but then Dr. Rausser did  the econometrics and then wrote the draft that came 10:21  out with that, the first draft of that. That would  be the way I would describe that.</p> <p>The discussion of the various subgroups  there of respondents, Dr. Rausser took the lead on  that and I probably kibitzed and probably did 10:22  some – I know I did some rewriting there. The  implied bid income elasticities, that was – that  was really a joint effort in the sense that both of  us independently were struck by the slope of the bid  function, to start with, and just kind of the slope 10:22  and the shape of the bid function, and it – you  know, just intuitively it struck me that it would be  worth trying to do some calculations of what the  implied elasticities were with response to the bids,  and then Dr. Rausser was the one that said, sure, we 10:22  can do that, and he did it. Same with the income  elasticities. We – he and I – I think he was  probably the one in our first discussions that  thought, you know, we really need to look at income  elasticity here, too, and I said, yeah, I think 10:23  60</p>
<p>1 take the lead on writing those, but, you know, once  2 Dr. Rausser had given me his input on what he  3 thought was important, and I think that was really  4 the process that we used that kind of led up to how  5 the report came together, so – 10:20  6 <b>Q Am I correct on, Chapter 4, you took the lead?</b>  7 A With one exception, specifically, and that's  8 the scope test discussion. That was a – that was  9 really a joint effort, more of a joint effort. I  10 think Dr. Rausser may have been the one that took 10:20  11 the primary role for that, but I – I may be wrong.  12 There were a couple of – we were working pretty  13 fast and furious there for a while and I think he  14 did the first draft on that, but I may have done the  15 first and he did a major rewrite. 10:20  16 <b>Q Are you referring to Section 4 –</b>  17 A Section 4.41, specifically.  18 <b>Q Okay. And then what about Chapter 5, who took</b>  19 <b>the lead on Chapter 5?</b>  20 A Dr. Rausser took the lead on Chapter 5, but, 10:21  21 you know, once again, this was – this was a joint  22 effort in several ways. You know, following the  23 overall methodology that I described to you earlier,  24 one of the things that we – you know, my staff and  25 I did the recoding of the base survey data, and then 10:21  59</p>	<p>that's a great idea, and we talked through the  thoughts about it, and then he took the lead on  actually doing the calculations. The willingness to  pay of the recoded data there, that Section 5.5, you  know, I think I kind of described what we did with 10:23  that.</p> <p><b>Q With regard to the recoding of data, you</b>  <b>mentioned your staff participated in that?</b>  A Uh-huh.  <b>Q Did all three individuals participate or who 10:23</b>  <b>specifically was involved?</b>  A Yeah, there were two people that were involved  in doing that, Kristi Mathews and Anne Chance, and  then we turned it over to Gordon's staff.  <b>Q Okay. What background does Ms. Mathews have 10:23</b>  <b>in recoding of data?</b>  A She has been working on various kinds of  survey and nonsurvey data collection and analysis  her entire career, and she has a tremendous amount  of experience in doing that that precedes even 10:24  working with me. She was employed at the Howrey &amp;  Simon Law Firm for four or five years before she  came to work at Research Triangle Institute, and she  did a lot of work on litigation support on antitrust  matters where she did a lot of data manipulations 10:24  61</p>

1 and the like. She's worked with me on, I don't  
 2 know, 10, 12, 15 different projects, all of which  
 3 have involved some form of data manipulation of one  
 4 type or another.

5 **Q What is Ms. Chance's background in recoding of 10:25**  
 6 **data?**

7 A She has less experience than Kristi did. She  
 8 was basically the one who did what Kristi told her  
 9 to do, and then Kristi reviewed -- she wrote -- she  
 10 put together the SAs -- excuse me, the Stata code 10:25  
 11 that we used. S-T-A-T-A. I think it's all caps, if  
 12 I'm not mistaken. She wrote the codes, Kristi  
 13 reviewed her code, and she -- Kristi then reviewed  
 14 what she did, so she was really the person who was  
 15 responsible for the actual implementation under 10:25  
 16 Kristi's supervision, and, you know, Kristi and I  
 17 and Gordon really went through and talked through  
 18 how are we going to do this, and so then we were  
 19 just responsible for the mechanics of doing it, and  
 20 then he was responsible, he and his staff were 10:25  
 21 responsible for the actual statistical  
 22 implementation of the analysis, if that clarifies  
 23 it.

24 **Q Did you personally review the Stata code that**  
 25 **Ms. Chance wrote? 10:26**

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to that question is is that I'm not sure. And in  
 the sense that I know that several of Dr. Rausser's  
 staff and my staff had conversations back and forth,  
 particularly related to the recoded data and so  
 forth, and when they were -- but so from that 10:28  
 standpoint, they probably talked about some of the  
 materials that are contained in there, but in terms  
 of the physical production of those appendices, we  
 didn't have any specific responsibility for the  
 physical production of those. Now, Dr. Rausser's 10:28  
 staff did. I probably looked at those and reviewed  
 those because some of those -- I mean, once again,  
 some of those materials were in the main body of  
 Section 5, and I know I went through the ones that  
 were in the main body of Section 5 pretty carefully 10:29  
 when they were in the main body of the report.

**Q If you'll turn your attention to Chapter 6, or**  
**at least just of the table of contents, what was**  
**your involvement in the preparation of Chapter 6?**

A Well, I'm trying to remember who had the first 10:29  
 draft of 6. I think I -- I can't remember whether  
 Kristi Mathews or I did the first draft on that. At  
 one point, that was a section within the -- within  
 Section 4, and then I decided to move it out because  
 I thought it was getting lost within all the other 10:29

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1 A No, it's a good faith -- I do not. I talked  
 2 it through with Kristi is what we were trying to do,  
 3 and I rely on -- her Stata skills are much better  
 4 than mine.

5 **Q Let me turn your attention to Appendix A. 10:26**  
 6 **What was your involvement in the preparation of**  
 7 **Appendix A?**

8 A Of Appendix A. My involvement in Appendix A  
 9 was as a contributor to the up-front kind of what  
 10 are we going to try to do here. Kristi wrote the 10:26  
 11 first -- Kristi Mathews, to be specific, wrote the  
 12 first draft of that appendix, I then rewrote that,  
 13 and then Gordon, obviously, had input into it at  
 14 different points in time, but she had the first  
 15 draft responsibility for that, after we'd gone 10:27  
 16 through, and that came -- that appendix at one point  
 17 was part of the main body of the report, and so I  
 18 was working on it in there, and I just decided at  
 19 some point that it was sufficiently long that it  
 20 was -- it would work better as a separate appendix, 10:27  
 21 so I moved it out of the main body where we were  
 22 working on it and put it in the appendix.

23 **Q Were any of your staff members involved in any**  
 24 **other appendix?**

25 A I'll look and see. I think the -- my answer 10:27

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issues that were being covered in Section 4. And I  
 just -- I don't remember who did the first draft on  
 that. I know I went through it multiple times, and  
 Dr. Rausser did, too.

**Q And how about Chapter 7? 10:30**

A Chapter 7 was -- that was done as a -- I would  
 say that the first draft of that was split up  
 between myself and Kristi Mathews, and then between  
 the two of us, we both worked on rewriting that. I  
 know I reworked that several times over the course 10:30  
 of getting the report finished.

**Q Let me hand you what's been marked as Exhibit**  
**2, which is entitled Report of the NOAA Panel on**  
**Contingent Valuation dated January 11, 1993. Are**  
**you familiar with this report? 10:31**

A Yes, I am.

**Q What was the purpose of the NOAA report?**

MR. DEIHL: Object to the form of the  
 question.

A The -- I -- the NOAA panel report was a report 10:31  
 that was done by the National Oceanic and  
 Atmospheric Administration. They formed the blue  
 ribbon panel. You know, I don't -- you know, I know  
 what their stated purpose was, which was to provide  
 a review of contingent valuation, and the state of 10:32

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1 the art of contingent valuation and whether it could  
 2 be used in natural resource damage assessment.  
 3 Whether NOAA had other purposes in forming that  
 4 panel I don't know, but I know what I know from  
 5 reading the Federal Register notice that first came 10:32  
 6 out when they indicated that they were going to form  
 7 this panel; and then testifying before the panel,  
 8 and then reading the report once it finally came  
 9 out.  
 10 **Q On whose behalf did you present testimony 10:32**  
 11 **before the panel?**  
 12 A I think it was for the Ad-Hoc Industry Group,  
 13 A-D-H-O-C Industry Group, which is -- I think -- I  
 14 think that was done on their behalf is what I  
 15 recall. I'm trying to think back that far as to who 10:33  
 16 actually sponsored those comments.  
 17 **Q And I'm sorry, the group's name was the**  
 18 **Ad-Hoc --**  
 19 A Yeah, it's called the Ad-Hoc Industry Group.  
 20 **Q And whose interests did the Ad-Hoc Industry 10:33**  
 21 **Group represent?**  
 22 A Various -- the members of that group are a lot  
 23 of -- a large number of major companies.  
 24 **Q Can you give me some examples?**  
 25 A Yeah, I can give you a few. Alcoa Aluminum is 10:34  
 66

1 one of the members. General Motors is another  
 2 member. General Electric is another member.  
 3 Chevron Texaco is another member. Exxon is a  
 4 member. General Electric is a member. U.S. Steel  
 5 is a member. Gosh, those are some of the ones that 10:34  
 6 I can think of off the top of my head.  
 7 **Q Okay. Let me hand you what's been marked as**  
 8 **Exhibit 3, which is an excerpt from the transcript**  
 9 **from the August 12, 1992 hearing before the NOAA**  
 10 **panel. Now, this is -- if you look through this 10:35**  
 11 **exhibit, is this the testimony you were referring to**  
 12 **before?**  
 13 A I believe that it is. I haven't seen this in  
 14 a long time so I'm just looking it over --  
 15 **Q Okay. 10:35**  
 16 A -- to see.  
 17 **Q If you turn to Page 247, line number 10,**  
 18 **there's a sentence there that reads, my appearance**  
 19 **here today is supported by a diverse group of**  
 20 **industrial companies. Is that the group of 10:36**  
 21 **companies you were just testifying to?**  
 22 A Exactly, yes, that was the formal name of  
 23 the -- of that group. Basically, it's just an  
 24 association that is -- that a lot of different  
 25 companies use for doing research and a lot of 10:36  
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different purposes, and so that's the -- that is  
 that diverse group of companies.  
**Q Okay. If you turn to line 15.**  
 A On the same page?  
**Q On the same page. 10:36**  
 A Uh-huh.  
**Q If you could read aloud that paragraph,**  
**please?**  
 A I just looked at that paragraph, yes. I also  
 remember that Mr. Luthi, L-U-T-H-I, asked people to 10:36  
 indicate whether they felt like that they might also  
 have a future financial interest in the continuation  
 of contingent valuation. After what we've heard  
 today, I may have had a past involvement in  
 developing these questionnaires. We've also heard 10:37  
 that probably I've lost my ability to be able to  
 develop such questionnaires, so I guess I no longer  
 have a future financial interest in such  
 development.  
**Q Now, when you told the panel, we've also heard 10:37**  
**that probably I've lost my ability to be able to**  
**develop such questionnaires, what did you mean by**  
**that?**  
 A Well, that was my attempt at humor that often  
 gets me into trouble, but be that as it may, I was 10:37  
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referring to the fact that several people that had  
 preceded me were critical of the survey work that I  
 had done as part of the Exxon Valdez studies, and  
 that they were particularly critical of the surveys  
 that I had done. 10:38  
**Q If you turn to the following page, Page 248,**  
**starting on line 10.**  
 A Uh-huh.  
**Q And there --**  
 A Line 10? Excuse me. 10:38  
**Q Yeah, actually, let me direct your attention**  
**up to line 6.**  
 A Okay, thank you.  
**Q And there you say, we did in our report try to**  
**base it on a review of 24 studies that we feel deal 10:38**  
**with nonuse values. Our conclusion was that these**  
**studies really did not provide evidence to conclude**  
**that CV was either valid or reliable. In fact, our**  
**conclusion was that CV is not a valid or reliable 10:38**  
**for use in damage assessment purposes, and also that**  
**the fixes are not going to be remedied by a simple**  
**quick fix additional research; do you see that**  
**there?**  
 A I do see that.  
**Q And with regard to your statement that CV is 10:38**

<p>1 <b>neither valid nor reliable for use in damage</b>  2 <b>assessment purposes, is that a view you hold today?</b>  3 A Yes. Specifically, as CV is applied to  4 measuring nonuse values.  5 <b>Q Do you believe that CV can be used to apply to</b> 10:39  6 <b>use values?</b>  7 MR. DEIHL: Object to the form of the  8 question.  9 A I think that with use values, you have a  10 better chance of getting a reliable estimate, but my 10:39  11 experience in continuing to try to use stated  12 preference methods, since I made these words a  13 number of years ago or said these words a number of  14 years ago, probably indicates that I'm more  15 pessimistic about doing that than I probably even 10:39  16 was at that time.  17 <b>Q (By Ms. Moll) At this time, though, the NOAA</b>  18 <b>panel concluded, did it not, that a CV study meeting</b>  19 <b>its guidelines would provide a reliable damages</b>  20 <b>estimate; isn't that right?</b> 10:40  21 MR. DEIHL: Object to the form of the  22 question.  23 A Well, the -- as I recall their conclusion, and  24 their conclusion, as I recall, was was that a CV  25 estimate would provide a starting point for 10:40  70</p>	<p>conjoint as well -- compared to the estimates based  on revealed preference models.  COURT REPORTER: On what?  A Revealed preference. I'm sorry.  <b>Q (By Ms. Moll) Okay. You mentioned that you</b> 10:42  <b>view the guidelines as a starting point for the</b>  <b>trier of fact; is that right?</b>  A Yes.  <b>Q But what other requirements would you impose?</b>  MR. DEIHL: Object to the form. 10:42  MR. HIXON: Object to the form.  A Could you add a little bit more context to  your question for me in terms of what -- what  other -- could you just elaborate for me just a  little bit? 10:43  <b>Q (By Ms. Moll) Dr. Desvousges, I'm trying to</b>  <b>gain an understanding of the circumstances in which</b>  <b>you would view a CV study as providing a reliable</b>  <b>damages estimate.</b>  A Okay. Thank you. I think the -- for me, the 10:43  important thing that -- is to have some way of  establishing some type of external validity, that  some way of being able to have a -- something that  can be compared against that gets you closer to the  truth than what we have today. And I think to me, 10:44  72</p>
<p>1 consideration by the trier of fact. So that the --  2 I think that the panel itself basically just said --  3 the way I interpreted it was that if you met these  4 guidelines, it's a starting point that can be  5 considered, but ultimately the judgment of the 10:40  6 reliability of any study is going to be the trier of  7 fact in a particular instance.  8 <b>Q Now, you mentioned your current skepticism of</b>  9 <b>the CV approach. Do you share that skepticism</b>  10 <b>toward conjoint analysis?</b> 10:41  11 MR. DEIHL: Object to the form of the  12 question.  13 A Actually, it has been the use in a couple of  14 conjoint studies that where I've estimated  15 recreational use values in both Lavaca Bay, 10:41  16 L-A-V-A-C-A, Bay, and the Fox River, that has --  17 that has led me to become, I guess more skeptical or  18 less -- certainly less reliable -- less convinced  19 that one can get use values. The one advantage that  20 you have with use values is is that you have the 10:41  21 opportunity to have a behavioral indicator there,  22 you know, that you do have behavior that you can  23 compare things to, but what we've found is is that  24 there's -- there continue to be fairly large  25 divergences between the estimates based on the 10:42  71</p>	<p>trying to add more where we think about ways of  establishing that kind of external validity would  help to determine whether or not one could ever --  whether or not I would be able to change my  conclusion. 10:44  <b>Q Well, in your professional opinion, what would</b>  <b>be required to establish the external validity that</b>  <b>you're talking about?</b>  A That's the hard part is that when you're  talking about external validity, the -- there -- one 10:44  form that that external validity has taken has been  where people actually make the contributions, that  you actually do a CV study, and then you also -- you  also do a companion study for the same situation in  which people actually have a financial commitment. 10:45  To me, that moves us in the direction of some kind  of external validation where people are making real  commitments.  <b>Q Okay. What other ways can this external</b>  <b>validity be established?</b> 10:45  A Specifically for CV to measure use values,  nonuse values? Do --  <b>Q A total valuation.</b>  A A total valuation, of which nonuse values may  be a large component of. Okay. Thank you. I'm not 10:45  73</p>



1 sure what else you can do because for me, the  
 2 biggest detriment with the total valuation studies  
 3 is the fact that they are divorced from any attempt  
 4 to try to bring in a use value component to them so  
 5 that you can maybe look at the use value aspect of 10:46  
 6 it, and at the same time, there's really, you know,  
 7 there's not been, in an instance in a damage  
 8 assessment, where someone has really thought about  
 9 whether they would try to do something that, you  
 10 know, that actually involved an actual payment that 10:46  
 11 people would make.

12 **Q Okay.**

13 A If there was some way to do that.

14 MS. MOLL: I think it's time for a tape  
 15 change. Thank you. 10:46

16 VIDEOGRAPHER: We are off the record. The  
 17 time is 10:42 a.m.

18 (Following a short recess at 10:46 a.m.,  
 19 proceedings continued on the record at 10:58 a.m.)

20 VIDEOGRAPHER: We're back on the record. 10:58  
 21 The time is 10:53 a.m.

22 **Q (By Ms. Moll) Dr. Desvousges, can people who**  
 23 **have a use value for an item also have a nonuse**  
 24 **value for that item?**

25 A Yes, conceptually. 10:58

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items marked with a no under the heading  
 sufficiently addressed in Stratus CV study?

A No, I have not.

**Q Okay. If you'll go back to Exhibit No. 2 and**  
**have them side by side, if you could. 11:00**

A Sure.

**Q And Exhibit No. 2 is the NOAA panel report.**  
**And please turn to Page 30 of that report. Do you**  
**have that in front of you?**

A Yes, I do. 11:00

**Q Okay. Now, the NOAA report lays out what are**  
**commonly referred to as the NOAA guidelines; is that**  
**right?**

A The general guidelines, yes.

**Q And so let's start with the first general 11:01**  
**guideline that's listed on Page 30, sample type and**  
**size. Now, this guideline states -- the first**  
**sentence states, probability sampling is essential**  
**for a survey used for damage assessment; do you see**  
**that? 11:01**

A Yes, I do.

**Q Now, the Stratus survey used a probability**  
**sample; isn't that right?**

A Yes, it does.

**Q And then the second sentence here says, the 11:01**

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1 **Q Okay. If you'll take out the expert report**  
 2 **that you have before you.**

3 A Uh-huh.

4 **Q I forget which exhibit number it is. It**  
 5 **should have been Rausser Deposition Exhibit No. 2. 10:58**

6 A That's Desvousges.

7 **Q Forgive me.**

8 A I'll get 2. Can we do something with this  
 9 over here?

10 MR. DEIHL: Yes, this is really 10:58  
 11 irritating. I'm sorry.

12 A Thank you.

13 MR. DEIHL: If not, I'll unplug it.

14 A I have Exhibit No. 2.

15 **Q Okay, thank you. If you'll kindly turn to 10:59**  
 16 **Page 81 of your report.**

17 A 81?

18 **Q Yes.**

19 A Okay.

20 **Q And let me direct your attention specifically 10:59**  
 21 **to Table 410, which is entitled Summary Table of**  
 22 **NOAA Panel Guidelines. Do you have that in front of**  
 23 **you?**

24 A Yes, I do.

25 **Q Have you changed your opinion as to any of the 11:03**

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choice of sample specific design and size is a  
 different technical question that requires the  
 guidance of a professional sampling statistician;  
 did I read that correctly?

A Yes, you did. 11:01

**Q And here, the Stratus team received the**  
**guidance from Dr. Roger Tourangeau; correct?**

A That's my understanding, based on his  
 deposition testimony.

**Q And Dr. Tourangeau is a professional sampling 11:01**  
**statistician, is he not?**

A That, and survey methodologist was -- I'm not  
 sure whether he -- I remember him labeling himself  
 as a survey methodologist, but also I think  
 statistician goes along with it. 11:02

**Q Okay. Now, this guideline on Page 30 does not**  
**speak to the size of the base survey relative to the**  
**scope survey; isn't that right?**

A That's correct, it does not, but it does speak  
 to the overall question of sample size and the 11:02  
 importance of sample size in drawing any conclusions  
 from the work.

**Q Are relative sample sizes for base and scope**  
**instruments mentioned anywhere in the NOAA panel**  
**report? 11:02**

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1	A Well, it does talk about the issue of base and		A I think this is actually broader than the NOAA	
2	scope, but the specifics of that are my		panel, but certainly I'm trying to recall	
3	interpretations.		specifically whether NOAA -- whether NOAA ever	
4	<b>Q Going back to your expert report, in the</b>		really set a guideline. They came out with some	
5	<b>second item identified in Table 410, you've</b>	11:03	proposed regulations, and it may have been in those	11:05
6	<b>identified the NOAA panel guideline as nonresponse</b>		proposed regulations that there was the 70 percent	
7	<b>biased; do you see that?</b>		number.	
8	A Yes, I do.		<b>Q But to your knowledge, that proposed</b>	
9	<b>Q Is that a reference to the second guideline in</b>		<b>regulation was not promulgated?</b>	
10	<b>the NOAA report on Page 30, which is entitled</b>	11:03	A Well, it was promulgated, but --	11:05
11	<b>minimized nonresponses?</b>		<b>Q But not accepted?</b>	
12	A Yes, it is, that further goes on to say that		A Well, not exactly, in the sense that basically	
13	high nonresponse rates would make the survey results		what NOAA ended up deciding to do was to throw out	
14	unreliable.		all the discussion -- I don't -- I don't want to	
15	<b>Q Now, the NOAA report does not identify a</b>	11:03	overstate. They completely refocused the entire	11:06
16	<b>threshold response rate; correct?</b>		damage assessment regulations away from an emphasis	
17	A There was a lot of discussion about that, as		on valuation and toward an emphasis on restoration	
18	to whether they were going to do that or not, and I		and using scaling methods for restoration, so there	
19	don't remember whether they came up with one or not.		was -- there was a considerable amount of	
20	I know there was a lot of discussion about 70	11:03	controversy over their first draft regulations that	11:06
21	percent, but I think they ultimately ended up not		they put forth and a lot of public comment on those	
22	specifying one.		regulations. They then took a long time, went back	
23	<b>Q Okay. Now, when you say there was a lot of</b>		to the drawing boards, and removed -- removed all	
24	<b>discussion about the response rate, what are you</b>		the discussion of -- you know, they had a lot of	
25	<b>referring to?</b>	11:04	stuff in there on -- that really was moving along	11:06
	78		80	
1	A Well, there -- in -- in the -- as to whether		with the NOAA panel, and then they took it all out	
2	or not it was appropriate to have a specific		and they basically just said, you know, it just	
3	response rate guidance, and there were some -- some		needs to be reliable.	
4	people who testified, I believe, who thought that it		<b>Q So to your knowledge, has NOAA ever adopted a</b>	
5	was important and others who did not, and I know	11:04	<b>threshold response rate?</b>	11:07
6	that -- that under -- so that's really what I was		A I'd have to go back and double-check that to	
7	talking about.		see whether they had or not. I -- I don't recall.	
8	<b>Q So just so I understand.</b>		<b>Q If you'd kindly turn to Page 78 of your</b>	
9	A Sure.		<b>report.</b>	
10	<b>Q So you're referring to the testimony before</b>	11:04	A 78?	11:07
11	<b>the NOAA panel by the --</b>		<b>Q Yes, please. And I'll direct your attention</b>	
12	A The various --		<b>to the second paragraph under Section 4.6.</b>	
13	<b>Q -- many economists?</b>		A The response rate?	
14	A That's right.		<b>Q Yes.</b>	
15	<b>Q And you testified before that panel; correct,</b>	11:04	A That paragraph?	11:07
16	<b>as we saw?</b>		<b>Q Yes. And then in the third sentence there you</b>	
17	A Yes, that's correct.		<b>say, according to Smith 2007, the NOAA panel defined</b>	
18	<b>Q Now, in your discussion, going back to your</b>		<b>70 percent as a high response rate; do you see that?</b>	
19	<b>report.</b>		A That -- that's correct.	
20	A Uh-huh.	11:05	<b>Q Is that a reference to Kerry Smith?</b>	11:08
21	<b>Q Table 4.1, you mention the guidelines set by</b>		A I believe so.	
22	<b>NOAA and OMB.</b>		<b>Q Now, Kerry Smith was not a member of the NOAA</b>	
23	A Uh-huh.		<b>panel, was he?</b>	
24	<b>Q I assume there when you say NOAA, you mean the</b>		A No, he was not.	
25	<b>NOAA panel?</b>	11:05	<b>Q Let me go back to Page 81.</b>	11:08
	79		81	

data are missing completely at random; do you see that?

A I do see that.

Q And is this where your reference to a threshold response rate of 80 percent comes from? 11:11

A It certainly – I believe so. I – there is another OMB document that – but certainly in terms of this particular document, that would be the 80 percent number that's contained in this document.

Q Now, when you say there may be another OMB document, do you mean another guideline or a separate report altogether? 11:11

A A separate report altogether. Now, OMB has produced several different reports related to surveys and data collection and the use of information. 11:12

Q But this –

A This is the one that's referenced, that's correct.

Q And this particular document does not establish a threshold response rate of 80 percent, does it? 11:12

A Well, to me, it's an implicit – in the sense that what it does say is that if you have something less than 80 percent, then you need to 11:12

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start doing some kind of nonresponse analysis, and that if you're above 80 percent, implicitly to me, this means that that's much less important for you to do. So implicitly, I would view it as a guideline. 11:12

Q Now, going back to your Table 4.10 on Page 81. A Uh-huh.

Q Still in the section you've labeled nonresponse bias. A Yes. I'm getting multiple documents here. So 11:13

--

Q Page 81 of your report. A Thank you. I have it.

Q Okay. So I'm in the section you've labeled nonresponse bias. 11:13

A Uh-huh.

Q And in your discussion section, the second sentence reads, the nonresponse analysis does not address how the nonrespondents differ from the respondents in terms of the respondent opinions and 11:13

experiences that influenced their votes on the program. Did I read that correctly?

A Yes, you did.

Q Where do you find language in the NOAA guidelines about comparing terms of respondent 11:14

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<p>1 <b>opinions and experiences that influence their votes</b></p> <p>2 <b>on the program?</b></p> <p>3 A Well --</p> <p>4 MR. DEIHL: Object to the form of the</p> <p>5 question. 11:14</p> <p>6 A The -- the issue here really is in terms of</p> <p>7 what does -- what does nonresponse really address,</p> <p>8 and essentially, if -- in order to really be able to</p> <p>9 address nonresponse, you need to know the factors</p> <p>10 that really influence people's answers. And if you 11:14</p> <p>11 don't have that information about the</p> <p>12 nonrespondents, then you really don't have a basis</p> <p>13 for trying to do it. So specifically, for example,</p> <p>14 if people differed only in terms of their education</p> <p>15 and you knew how the nonrespondents' education 11:14</p> <p>16 levels were different than the ones that you have,</p> <p>17 then you could make an adjustment. But if it gets</p> <p>18 into attitudes and specific experiences that they</p> <p>19 may have had as to you whether they're a user or</p> <p>20 nonuser, you can't do that. So you really end up 11:15</p> <p>21 with this inability to know what is really going on</p> <p>22 with the people who aren't respondents. So to me,</p> <p>23 the idea is is that it's -- when your response rate</p> <p>24 drops below into the levels like the 50 percent</p> <p>25 level here, that these issues of the fact that 11:15</p> <p style="text-align: center;">86</p>	<p>differences and ways that you can't measure between</p> <p>respondents and non respondents. And when your</p> <p>response rate -- the lower response rates I think</p> <p>raise the chances that you're going to run into that</p> <p>issue. And then when you look at -- look at the 11:17</p> <p>results of the Stratus survey, you see the factors</p> <p>that really influence people's votes go beyond the</p> <p>things that we have data on about nonrespondents.</p> <p><b>Q Let's turn back to Exhibit 4.</b></p> <p>A Sure. 11:17</p> <p><b>Q Which are the OMB guidelines. We were dealing</b></p> <p><b>before with guideline 3.2.9 on Page 16.</b></p> <p>A Uh-huh.</p> <p><b>Q Where it talks about a survey with an overall</b></p> <p><b>unit response rate of less than 80 percent. Do you 11:17</b></p> <p><b>have that in front of you?</b></p> <p>A That's correct.</p> <p><b>Q There is no language in this particular</b></p> <p><b>guideline, is there, about doing a comparison in</b></p> <p><b>terms of respondent opinions and experiences that 11:18</b></p> <p><b>influence their votes on the program, is there?</b></p> <p>A No, there's not.</p> <p><b>Q Do you find that language anywhere in the OMB</b></p> <p><b>guidelines?</b></p> <p>A Well, what I find here is that -- is the issue 11:18</p> <p style="text-align: center;">88</p>
<p>1 you've got almost half the people not completing the</p> <p>2 survey, you need to take it more seriously in order</p> <p>3 to what I think responds to what their concern is</p> <p>4 that you need to really address this.</p> <p>5 <b>Q Well, I understand that that's your 11:15</b></p> <p>6 <b>interpretation, but let me ask my question again.</b></p> <p>7 A Sure. I'm sorry.</p> <p>8 <b>Q My question is, where do you find language in</b></p> <p>9 <b>the NOAA guideline that talks about the comparison</b></p> <p>10 <b>that you reference in your chart? 11:16</b></p> <p>11 A The language that I'm relying upon is is that</p> <p>12 their indication that nonresponse bias is something</p> <p>13 that should be addressed, and so to me, in terms of</p> <p>14 if you're going to address nonresponse bias, you</p> <p>15 need to deal with it in a serious manner. 11:16</p> <p>16 <b>Q And I guess I have the same question in terms</b></p> <p>17 <b>of the OMB guidelines. Where in the OMB guidelines</b></p> <p>18 <b>do you find language that talks about making a</b></p> <p>19 <b>comparison in terms of respondent opinions and</b></p> <p>20 <b>experiences that influence their votes on the 11:16</b></p> <p>21 <b>program?</b></p> <p>22 A Sure. Well, once again, I think it's the same</p> <p>23 answer in terms of being able to think about -- I</p> <p>24 mean, the issue with nonresponse biases, it gets</p> <p>25 down to whether or not there are fundamental 11:16</p> <p style="text-align: center;">87</p>	<p>that relates to a -- okay, if you go on, comparison</p> <p>of the -- if you continue on with that discussion on</p> <p>over to Page 17, comparison of respondents to known</p> <p>characteristics of the population from an external</p> <p>source can provide an indication of possible bias. 11:18</p> <p>Now, especially if the characteristics in question</p> <p>are related to the survey's key variables. Well,</p> <p>the adjustment that was made in the survey by Dr.</p> <p>Tourangeau, I believe specifically, dealt with the</p> <p>things that he could measure with nonrespondents, 11:19</p> <p>like education and a couple -- I think four</p> <p>variables. Well, if you go on and if you look at</p> <p>what it says here in terms of the survey's key</p> <p>variables, well, if you look at the things that</p> <p>influenced the votes, which to me would be the 11:19</p> <p>survey key variables, you don't have that</p> <p>information about nonrespondents. You can figure</p> <p>out what their education on average probably is,</p> <p>because you can look at the census, but you can't</p> <p>really do it in terms of what their view is of the 11:19</p> <p>environment or the effectiveness of the restoration</p> <p>program because they haven't been asked those</p> <p>questions, but yet those are the things that really</p> <p>influence their answers. So to me, when you look at</p> <p>the broad interpretation of what they have here, I 11:19</p> <p style="text-align: center;">89</p>

1	think it does speak to the specific points that I've		Q I'm sorry. In your report on Page 78.	
2	raised in the table.		A Oh, 78. Yes.	
3	Q But the language that you reference at the end		Q Okay. And I'm looking at the section heading	
4	of guideline 3.2.9 talks about a comparison of the		for Section 4.6.	
5	respondents to known characteristics of the	11:20	A Yes.	11:22
6	population from an external source; isn't that		Q And the section heading provides, the Stratus	
7	correct?		survey contains nonresponse bias; did I say that	
8	A Yes, that's correct.		correctly?	
9	Q And isn't that what Dr. Tourangeau did?		A Yes, you did.	
10	A Up to a point.	11:20	Q Is that your conclusion here?	11:22
11	Q And the comparison that you suggest in your		A Yes, it is.	
12	chart would not be from an external source; isn't		Q Now, you have all the survey data, do you not?	
13	that right?		A Yes, I do.	
14	A Oh, it would be.		Q Did you perform any analysis of that data to	
15	Q How would that be from an external source?	11:20	conclude that nonresponse bias exists?	11:22
16	A You'd have to have it.		A Well, what – I did not do a specific	
17	Q What would the external source be in your		analysis. What I did do was to look at the response	
18	example?		rate, to look at the analysis that was done, and to	
19	A Well, yeah, an external source would be		conclude that when you've got a 50 percent response	
20	whether or not there was information that existed	11:20	rate and – roughly 50 percent, 52 percent, and	11:23
21	that dealt with some of the things that were being		you're missing the other 48, and you have – to me,	
22	measured in the study. And the difficulty that you		what's driving this is the fact that the people	
23	have in a study like this is that you don't have		who – we don't know how the people who didn't get	
24	that – you don't have it, and so what you're left		the survey are going to respond because most of the	
25	with then is is you either go out and you continue	11:20	things that explain their votes are things that	11:23
	90		92	
1	to try to interview people who don't respond or you		happened in the survey. So there's an element of	
2	make the adjustments that Dr. Tourangeau did, which		Catch 22 here. And so to some extent, I think	
3	is, okay, we know these four or five things, we can		that's what puts a greater weight on having a higher	
4	adjust for those. But what you don't know is is for		response rate in a survey where you're not going to	
5	all these other things that matter, you can't make	11:21	be able to explain that much just based on kind of	11:23
6	an adjustment for them, and that, to me, is the		census data that you know you can always get that	
7	whole heart of the nonresponse issue, and that's –		external reference to.	
8	that's really what I'm referring to in that table.		Q Do you have any quantitative evidence for	
9	Q So just so I'm clear.		concluding that nonresponse bias exists here?	
10	A Sure.	11:21	A Well, I have qualitative, but not quantitative	11:24
11	Q When you make a reference to OMB, and then you		evidence because you – the only way that you could	
12	go on to refer to this comparison –		have quantitative evidence would be is if you –	
13	A Uh-huh.		would be if you were able to go out and administer	
14	Q – are you referring to guideline 3.2.9?		the survey to a large enough sample of the	
15	A Well, I am, because I think if you read –	11:21	nonrespondents, and then to be able to see whether	11:24
16	when it talks about if the characteristics in		or not those nonrespondents respond in the same way	
17	question are related to the survey's key variables,		as the respondents, and that's the only way that you	
18	as you continue that through, to me, the survey's		could do it. So it's not possible to have a	
19	key variables in a lot of these surveys are not just		quantitative estimate without doing that kind of	
20	the ones that we routinely have information on.	11:21	independent work.	11:24
21	Q Let me turn your attention back to Page 78 of		Q If we could go back to the NOAA panel	
22	your report. Now, the section heading for Section		guidelines.	
23	4.6 states, the Stratus survey contains nonresponse		A Uh-huh.	
24	bias; do you see that?		Q Which is Exhibit 2. Excuse me. And here I'm	
25	A I'm sorry, where are we? I lost you.	11:22	referring to the guideline entitled, Careful	11:25
	91		93	

<p>1 Pretesting of a CV Questionnaire, which is on Page 2 31. 3 A Uh-huh. 4 Q You have that in front of you? 5 A I do have that. 11:25 6 Q Okay. I'm sorry to have multiple documents 7 open at one time, but I don't know of another way to 8 do it. 9 A That's okay. 10 Q If you could also turn to Page 82 of your 11:25 11 report. 12 A Oh, 82. Yeah, okay I have that. 13 Q Okay. 14 A What else was I supposed to have open? I'm 15 sorry — 11:25 16 Q Just the NOAA guideline. 17 A On what page? 18 Q On Page 31. 19 A Okay. I'm sorry, I opened that, but I didn't 20 open this. Okay. I have Page 31. 11:25 21 Q Okay. Now, the NOAA guideline entitled 22 Careful Pretesting of a CV Questionnaire provides 23 that respondents in a CV survey are ordinarily 24 presented with a good deal of new and often 25 technical information well beyond what is typical in 11:26 94</p>	<p>have them. Q (By Ms. Moll) And those versions would include what you refer to as salient changes and nonsalient changes, would they not? MR. DEIHL: Object to the form of the 11:27 question. A Well, they — they do to an extent in the sense that — that what — what — what I was looking for here was specifically whether or not 11:28 there was documentation of how these — of how things change and what changed when and where, and then how the specific focus groups and one-on-one interviews led to those things. Based on the fact that there really were no videotapes of the interviews, there were only some — some brief 11:28 summaries of the focus group interviews and the like, it was difficult to know what was being said in the focus groups. All we could do was to look at and see what changes occurred, but we could not look to see whether or not those changes were really in 11:28 response to what respondents said in the interview. So part — part of what I'm saying here I think is is that the idea that — with this notion of careful pretesting, to be able to document these changes in such a way that a reader like me could 11:28 96</p>
<p>1 most surveys. This requires very careful pilot work 2 and pretesting, plus evidence from the final survey 3 that respondents understood and accepted the main 4 description and questioning reasonably well; did I 5 read that correctly? 11:26 6 A Yes, you did. 7 Q Now, in your discussion section in your report 8 on careful pretesting, you first state that the 9 amount of pretesting does not correspond to careful 10 pretesting. Now, that language doesn't appear in 11:26 11 the guidelines, does it? 12 A No, it doesn't. 13 Q And then you go on to state, careful 14 pretesting would have documented the salient changes 15 in the questionnaire over time and the evolution of 11:26 16 the bid levels used, and then you cite Smith 2007; 17 do you see that? 18 A Yes, I do, yes. 19 Q Now, here you have all of the versions of the 20 survey questionnaire over time, do you not? 11:27 21 MR. DEIHL: Object to the form of the 22 question. 23 A I have the — I have the materials that were 24 provided, and I'm assuming that that would 25 correspond to all the versions, but — so I think I 11:27 95</p>	<p>come along and look at the report and be able to say aha, okay, this is what they did, when they did it, why they did it, and what respondents said in the focus groups that would have allowed us to make that point. And I think that's really what Kerry Smith 11:29 is talking about in — in what he — what he's adding some context to what does careful pretesting mean. I mean, the NOAA panel guidelines are pretty bare bones and pretty broad. So to me, I try to look at somebody who I think knows a lot about these 11:29 kinds of things and was writing on, how do you evaluate the quality of a CV survey, and so to me, I thought this was a salient point that was consistent with what the NOAA panel was saying. Q (By Ms. Moll) Well, I'm trying to understand 11:29 what you're relying on for your statement here. A Sure. Q And when you say careful pretesting would have documented the salient changes in a questionnaire over time, what specific documentation do you claim 11:29 is lacking here? MR. DEIHL: Object to the form. A Yeah, I guess my answer wasn't very clear because I tried to answer that. In the sense that I would like to have seen documentation of what was 11:30 97</p>



1	said in the focus groups, and then how that led to	A Yes.
2	the specific changes that were in the next version	<b>Q Is that his language?</b>
3	that was used in the next focus group.	A I'm pretty sure it is.
4	So, for example, we have a version that	<b>Q With regard to the Stratus survey, is it your</b>
5	was here in focus group 2 and we have a version that 11:30	<b>understanding that there were 35 plus focus groups? 11:32</b>
6	was in focus group 1, but we don't know very much	A There were a lot. I don't remember the
7	about what was said in focus group 1 that allows us	specific number, but there were a lot.
8	to know how 2 changed in response to what people	<b>Q Do you know how many one-on-one interviews</b>
9	said and why. All we have is the interpretation	<b>there were?</b>
10	on the part of the people that were there, and we 11:30	A There were quite a few of those. 11:33
11	don't have a videotape or an audiotape that would	<b>Q Do you have a ballpark figure?</b>
12	allow us to be able to hear what people were saying	A I don't know. I don't recall.
13	and to see whether or not -- whether or not I would	<b>Q Do you know how many pretests there were?</b>
14	have agreed with what those changes were that were	A Two, I believe.
15	made. So I guess that's the documentation that -- 11:30	<b>Q Do you know how many pilots there were? 11:33</b>
16	that I'm referring to.	A One -- two pilots.
17	<b>Q (By Ms. Moll) Now, the NOAA guidelines do not</b>	<b>Q And when all was totaled, do you know how many</b>
18	<b>require the audiotaping or videotaping of focus</b>	<b>respondents participated in the pretesting stage?</b>
19	<b>groups; correct?</b>	A There were a lot. I don't recall the specific
20	MR. DEIHL: Object to the form. 11:31	number. 11:33
21	A They are very general guidelines. They are	<b>Q Going back to your chart.</b>
22	very general guidelines. And so the question is	A Uh-huh.
23	whether or not you want someone to be able to come	<b>Q Under the guideline that you referred to as</b>
24	along and evaluate what you've done and the	<b>conservative design.</b>
25	judgments that you've made, and when you don't have 11:31	A Yeah, sure. 11:33
	98	100
1	those, all you can look at -- all you can look at is	<b>Q Do you have that in front of you?</b>
2	at the outputs that come out. I can look at the new	A Yes, I do. Thank you.
3	version, but I can't get a very good sense of the	<b>Q You first state in your chart that the CV</b>
4	inputs that led -- led to that new version. So I	<b>questionnaire is not balanced in terms of presenting</b>
5	guess that's really what I'm trying to get at here. 11:31	<b>information on the poultry industry and other 11:34</b>
6	<b>Q So let me ask my question again.</b>	<b>sources of phosphorus; did I read that correctly?</b>
7	A Sure.	A Yes, you did.
8	<b>Q If I could.</b>	<b>Q Now, the NOAA guideline, which is on Page 32</b>
9	A Okay.	<b>of Exhibit 2, doesn't use the term balance, does it?</b>
10	<b>Q The NOAA guidelines do not specifically talk 11:31</b>	A No, it doesn't use the term balanced. 11:34
11	<b>about audiotaping or videotaping of focus groups;</b>	<b>Q And when you made this statement in your chart</b>
12	<b>correct?</b>	<b>under the discussion session regarding conservative</b>
13	A No, they --	<b>design, are you making the assumption that the</b>
14	MR. DEIHL: Same objection.	<b>contribution of phosphorus by the poultry industry</b>
15	A They talk about careful pretesting. 11:31	<b>is smaller than the 60 percent figure mentioned in 11:34</b>
16	<b>Q (By Ms. Moll) But with specific regard to</b>	<b>the survey?</b>
17	<b>audiotaping and videotaping, they make no mention?</b>	A No, I'm not -- I'm not making that -- I don't
18	A They make -- it's a -- I would agree that they	know what the percentage is. My point is is that
19	don't, but I also think that it's a very broad	there's a lack of balance between the detailed
20	guideline, and to me, when you see the word careful 11:32	information that's presented on the number of 11:35
21	pretesting, you have to add some meat to what does	chickens and turkeys that are located within the
22	careful pretesting involve, and that's what I've	watershed versus the amount of details that are
23	done is add some meat to it.	provided on septic tanks and sewage treatment plants
24	<b>Q Does Kerry Smith in his 2007 paper here talk</b>	and golf courses and other sources of phosphorus
25	<b>about documenting salient changes? 11:32</b>	that exist in the area. So to me, in terms of 11:35
	99	101



balance, if you're going to provide specific information about one aspect, you provide specific information about the other aspects, too, so that people can form their own opinion about the relative weight of things, and not just simply rely upon that -- the numbers that are -- those specific numbers that are in there.

**Q Let me turn your attention, still within your chart in your report on Page 82, to the guideline you refer to as accurate description of injury and proposed program. Do you have that in front of you?**

A I do have that.

**Q And let me direct your attention to the second sentence of your discussion there. There you state, moreover, the damages estimate that results from the survey reflects injury from all past sources, not uniquely the poultry industry defendants. Because the described -- excuse me, alum treatment did not distinguish the source of the phosphorus, the CV results are not relevant for damage assessment as the NOAA panel guidelines indicate. Did I read that correctly?**

A Yes, you did.

**Q Now, the NOAA guidelines do not address allocating damages in a damage assessment; correct?**

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So to the extent that people are responding to things that go beyond the poultry industry, I think that you're getting answers that aren't relevant to the damage assessment.

**Q But do you agree with me that the question of the allocation of damages is a legal question?**

MR. DEIHL: Object to the form of the question.

A I would -- to a point, I guess. Thank you.

MS. MOLL: If you don't mind -- thank you. I was going to --

A She's sitting there eyeing the pitcher of water as it's coming to the table.

**Q (By Ms. Moll) I'm getting a little hoarse.**

A I know, so am I, so that -- you've asked as many questions as I've tried to answer, so we're both in the same boat.

**Q Okay. Let me turn your attention to the NOAA guidelines again.**

A Okay.

**Q Page 33.**

A Page 33, okay.

**Q The guideline is entitled, Pretesting of Photographs. Would you read the guideline for the court, please.**

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A What they -- I'm looking at that one on Page 32 and Page 33, which is the accurate description of the policy or program, and so to me, accurate implies that the information that's given is accurate and correct and the like, and then it also says that it must be defined in a way that's relevant to damage assessment. So to the extent that this is a damage assessment that's being conducted where the defendant is the poultry industry, I think that the survey includes things that in terms of what's explained to people that go beyond the poultry industry. So given that, I think that those answers that you're getting are larger than the answers that would be specific to the industry itself.

**Q But that NOAA guideline does not specifically address the allocation of damages; isn't that right?**

A Well, okay, it doesn't say that you have to allocate damages, but what it does say is it must be defined in a way that's relevant to the damage assessment. So that's the way I've interpreted what that sentence means. What's relevant to the damage assessment. Well, this is not a damage assessment about the sewage treatment plants, you know, this is a damage assessment that's associated with poultry.

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A Sure. Pretesting of photographs. The effects of photographs on subjects must be carefully explored.

**Q Now, here the effects of photographs on subjects were explored by the Stratus team during focus groups, were they not?**

A Based on the representations that have been made by -- by the various experts, yes. Whether or not those are careful ones, I don't know.

**Q Now, the effects of photographs on subjects were also explored during the one-on-one interviews; isn't that your understanding?**

A I believe that's correct, yes.

**Q And they were also explored during the pretests?**

A I don't recall specifically about the pretest. I do remember the first two.

**Q Okay. Now isn't it true that during the course of this testing process, the Stratus team conferred as a group and discarded several photographs based on the effect on respondents?**

A That's what they've reported, that's correct.

**Q And you've been provided with all photographs used during the testing process; isn't that right?**

MR. DEIHL: Object to the form of the

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1 question.			
2 A I don't know the answer -- I don't know as to			
3 whether I've seen all the photographs or whether I			
4 was able to find all the photographs.			
5 <b>Q (By Ms. Moll) Do you have any basis to</b> 11:42			
6 <b>believe that you have not been provided with</b>			
7 <b>everything?</b>			
8 A No, I don't, other than there's quite a few			
9 documents that were just not organized in a specific			
10 way, so I don't know whether I have them all or not. 11:42			
11 <b>Q Going back to your chart on Page 82 of your</b>			
12 <b>report.</b>			
13 A Uh-huh.			
14 <b>Q Under the guideline that you referred to as</b>			
15 <b>adequate time lapse from incident, do you see that?</b> 11:42			
16 A Yes, I do.			
17 <b>Q You believe that this guideline was not</b>			
18 <b>satisfied?</b>			
19 A Well, you know, essentially what -- you know,			
20 I do believe it was not satisfied, that's correct. 11:43			
21 <b>Q Now, in your view, what would be a long enough</b>			
22 <b>time lapse?</b>			
23 A I'll have to think about that a second. I			
24 think at least a year, maybe longer in terms of			
25 ultimately trying to sort -- I mean, one of the 11:43			
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1 things that -- let me change my answer, if that's			
2 okay. I think it's hard to put a specific number on			
3 it because this is something that -- that is -- what			
4 I'm trying to say in here basically just talks about			
5 the fact that information is changing as you're 11:44			
6 going along here, and that there's a lot of			
7 different pieces that come into play in doing that.			
8 And so it -- it's hard to know exactly when things			
9 start and when things end so as to how -- what is it			
10 that -- what's the incident specifically that you're 11:44			
11 going to put your handle on. This particular			
12 guideline was envisioned in terms of an oil spill,			
13 so you have a very clear incident that occurred at a			
14 very clear point in time. We have something here			
15 that the time period is more difficult to try to get 11:44			
16 your hands around, I guess is what I'm saying.			
17 <b>Q So do you have an opinion in this case what</b>			
18 <b>would be a sufficient time lapse?</b>			
19 A I'm not sure, I guess, as to what would be			
20 sufficient. 11:45			
21 <b>Q Okay. Now, in your discussion section</b>			
22 <b>relating to that same guideline.</b>			
23 A Uh-huh.			
24 <b>Q You state, the NOAA panel included this</b>			
25 <b>guideline to address frequent and biased media</b> 11:45			
107			
1 coverage of the environmental changes. Now, the			
2 NOAA guideline itself doesn't reference media			
3 coverage; correct?			
4 A No, it doesn't, but that was certainly, you			
5 know, some of the -- there was a lot of discussion 11:45			
6 associated with this in terms of the people who			
7 testified and this whole -- both of these two things			
8 that come here in terms of when you have something			
9 like an oil spill or a suit that's filed or			
10 whatever, that that media coverage can have an 11:45			
11 influence on people's responses. And so what --			
12 what the panel was really -- and, you know,			
13 anyone -- anyone who watched the media coverage			
14 associated with the Exxon Valdez knows exactly what			
15 that coverage was like, and I think the panel was 11:46			
16 really responding to that type of -- of pretty			
17 extensive media coverage in trying to formulate some			
18 guideline that you need to have some caution about			
19 the time lapse here. That's the context in which			
20 that's going on. 11:46			
21 <b>Q So do you believe their concern was over maybe</b>			
22 <b>an emotional impact that someone would have over</b>			
23 <b>seeing an oil-covered bird in the Exxon Valdez case</b>			
24 <b>or something like that?</b>			
25 A That was certainly one of the things that I 11:46			
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1 think was at issue, that's right.			
2 <b>Q But that came from the testimony before the</b>			
3 <b>panel?</b>			
4 A It was something that came up. It was -- I			
5 know it was something that was discussed either in 11:46			
6 the testimony or among the -- I've also looked at			
7 documents that I haven't looked at in quite a long			
8 time, but there were a series of documents that were			
9 provided as to some of the discussions that took			
10 place among the NOAA panel member themselves after 11:47			
11 the hearings, and this was an issue that they were			
12 grappling with because they didn't want to have			
13 media coverage having an inordinate influence in the			
14 damage assessment.			
15 <b>Q Now, in your discussion section of this</b> 11:47			
16 <b>guideline on Page 82.</b>			
17 A Uh-huh.			
18 <b>Q You state, the media coverage has increased</b>			
19 <b>awareness of the algae conditions over the last</b>			
20 <b>year.</b> 11:47			
21 A Yes.			
22 <b>Q In this statement, what media coverage are you</b>			
23 <b>referring to?</b>			
24 A There has been a number of newspaper articles			
25 and I believe some TV coverage that's dealt with 11:47			
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<p>1 the -- dealt with the filing of the suit and  2 subsequent discussions and so forth that have  3 happened.</p> <p>4 <b>Q And I guess my question is, what specifically  5 of that media coverage are you relying on? 11:48</b></p> <p>6 A You know, I've looked at some of the pieces  7 that were provided in the Chapman considered by  8 materials, so I've looked through some of those  9 things in particular.</p> <p>10 <b>Q Okay. Did you do a particular analysis of 11:48  11 media coverage over the last year?</b></p> <p>12 A No, I have not.</p> <p>13 <b>Q Do you know if anyone who works for you or Dr.  14 Rausser or Dr. Rausser himself did such an analysis?</b></p> <p>15 A I don't believe so. 11:48</p> <p>16 <b>Q Did you see any -- withdrawn. Now, in making  17 this statement in your discussion, are you relying  18 on any media coverage that you did not see evidence  19 of in the Stratus materials produced in this case?</b></p> <p>20 A Well, I know that in addition to those 11:49  21 articles, I have seen some other articles that have  22 appeared in some of the newspapers over -- you know,  23 over the last few months. You know, so it's not  24 just the ones that were in Stratus. They had a  25 large collection of them in there, but there have 11:49  110</p>	<p>Answers should be carefully coded to show the types  of responses, for example, one, it is or isn't worth  it, two, don't know, or three, the oil companies  should pay; did I read that correctly?</p> <p>A Yes, you did. 11:51</p> <p><b>Q Now, in the Stratus study, yes and no  responses were followed up by the open-ended  question, why did you vote yes or no; correct?</b></p> <p>A Yes, I say that in my report.</p> <p><b>Q And the answers to that question were 11:51  carefully coded to show the types of responses;  correct?</b></p> <p>MR. DEIHL: Object to the form of the  question.</p> <p>A The answers were -- were -- the open-ended 11:51  responses were coded in a -- by a -- by a company  that was retained to go through and code those  responses.</p> <p><b>Q (By Ms. Moll) Do you have any basis to  conclude that those answers were not carefully coded 11:52  by that company?</b></p> <p>A No, I don't, not -- not in terms of the  specific coding of the wording and what they did,  that was fine. That's not the point that I'm making  here. 11:52  112</p>
<p>1 also been some other articles that I remember  2 reading, as well.</p> <p>3 <b>Q Do you know whether those materials were  4 produced in your considered or referenced materials?</b></p> <p>5 A Well, they -- I don't -- I don't believe that 11:49  6 they were because I don't recall specifically -- you  7 know, when I looked at these, I might have looked at  8 them in the newspaper when I was out here on my site  9 visit, there's been some different things like that,  10 so I don't specifically -- I can't point to a 11:50  11 specific one.</p> <p>12 <b>Q Let me turn your attention to the following  13 page of your report, Page 83. And specifically  14 looking at the guideline you refer to as yes, no  15 follow-ups; do you have that in front of you? 11:50</b></p> <p>16 A Uh-huh.</p> <p>17 <b>Q Now, you claim here that the Stratus study  18 does not satisfy the yes no follow-up guideline;  19 correct?</b></p> <p>20 A Uh-huh. 11:50</p> <p>21 <b>Q And let me turn your attention also to Page 34  22 of the NOAA guidelines in Exhibit 2. Now, the  23 guideline entitled yes, no follow-ups provides yes  24 and no responses should be followed up by the  25 open-ended question why did you vote yes, no. 11:51</b></p> <p>111</p>	<p><b>Q I understand. Let's turn to the next  guideline in your report which you indicate a no  for.</b></p> <p>A Okay.</p> <p><b>Q Checks on understanding and acceptance. Let 11:52  me also turn your attention to Page 35 of the NOAA  guidelines.</b></p> <p>A Yes, I have that.</p> <p><b>Q Will you please read the guideline entitled,  Checks on Understanding and Acceptance? 11:53</b></p> <p>A The above guidelines must be satisfied without  making the instrument so complex that it poses tasks  that are beyond the ability or interest level of  many participants.</p> <p><b>Q Dr. Desvousges, is it your opinion that the 11:53  Stratus survey was so complex that it poses -- posed  tasks that are beyond the ability or interest level  of many participants?</b></p> <p>A Well, I believe that -- that the survey  results indicate that people answered the questions 11:53  very differently than was intended by the survey  designers. So whether -- to me, that's a -- you  know, that's a pretty good indication that people,  while they -- while they may have understood  something, they -- there are basically two 11:54  113</p>

1 interpretations you can make. They either  
2 understood what was read and then rejected it, or  
3 they didn't understand it and they went on anyway.  
4 So, for example, if you look at someone who  
5 indicated that they were valuing something other 11:54  
6 than Tenkiller Lake and the Illinois River, in that  
7 specific instance where you've got 40 percent of the  
8 people saying that they were, to me, that's an  
9 indication that they either didn't understand that  
10 the questionnaire was only about these two, or that 11:54  
11 they understood it but they said, well, that's okay,  
12 we really care about all of these things and we  
13 think that this number that I'm giving here really  
14 is going to help all these things, not just those  
15 two – not just those two water bodies. 11:55

16 **Q Well, my question relates specifically to the**  
17 **language of the guideline.**

18 A Okay. All right. Sorry.

19 **Q So let me rephrase my question, if I could.**

20 A Sure. 11:55

21 **Q In concluding that this guideline was not**  
22 **satisfied, is it your opinion that the survey**  
23 **instrument was so complex that it posed tasks that**  
24 **are beyond the ability or interest level of many**  
25 **participants?** 11:55

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**guidelines. If you would kindly turn to Page 35 of**  
**Exhibit No. 2, which is the set of NOAA guidelines.**

A I have that.

**Q Okay. You're open to Page 35; correct?**

A Yeah, of the guidelines? 01:11

**Q Correct.**

A Is that – yes, uh-huh.

**Q If you'd kindly read for me the guideline**  
**entitled Alternative Expenditure Possibilities.**

A Respondents must be reminded that their 01:11  
willingness to pay for the environmental program in  
question would reduce their expenditures for private  
goods or other public goods. This reminder should  
be more than perfunctory but less than overwhelming.  
The goal is to induce response to keep in mind other 01:11  
likely expenditures, including those on other  
environmental goods when evaluating the main  
scenario.

**Q Now, this guideline goes toward what kind and**  
**how much language gets put in the survey 01:11**  
**questionnaire about budget constraints; isn't that**  
**right?**

A Yes. It speaks to the budget constraint. It  
speaks to the issue in terms of what people are  
considering when they're giving their response or 01:12  
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1 A I believe that's the case.

2 **Q And what do you base that on?**

3 A Well, I – I just gave you one in terms of the  
4 40 percent of the people. There's also indications 11:55  
5 of people who thought that restoration was going to  
6 be faster or slower than what was indicated. There  
7 were also people who disagreed with the  
8 effectiveness of the restoration program. So to me,  
9 there were significant indications that either  
10 people were – you know, either didn't understand 11:56  
11 what was there or they understood it and they chose  
12 to ignore it in terms of the way they answered the  
13 questions.

14 MS. MOLL: I think we should probably take  
15 a tape change. 11:56

16 A Sure.

17 MS. MOLL: And what time is it?

18 VIDEOGRAPHER: We are off the record. The  
19 time is 11:52 a.m.

20 (Following a lunch recess at 11:56 a.m., 11:56  
21 proceedings continued on the record at 1:10 p.m.)

22 VIDEOGRAPHER: We are back on the record.  
23 The time is 1:06 p.m.

24 **Q (By Ms. Moll) Dr. Desvousges, before we broke**  
25 **for lunch, we were going through the NOAA 01:10**

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voting for a program or whatever in terms of other  
things that they could do with the money.

**Q And let me hand you what was marked as**  
**Deposition Exhibit No. 11 from the deposition of**  
**David Chapman, and this, I'll represent, is a copy 01:12**  
**of the base survey.**

A Okay.

**Q So – and this is Page A-19 that I'm handing**  
**you. Sorry for the awkwardness.**

A That's all right, not a problem. 01:12

**Q Okay. Now, if you look at the bottom of Page**  
**A-19, I'd like for you to read from the survey the**  
**two sentences starting with the last sentence at the**  
**bottom of that page and continuing on through the**  
**first sentence of the next page. 01:13**

A If the state?

**Q Correct.**

A Is that where you're – thank you. If the  
state does increase your taxes, you might prefer  
that it spend the money on other environmental 01:13  
issues or on issues other than the environment, or  
the tax increase might be more than your household  
can afford to pay. Are those the sentences?

**Q Correct. And then further down in the**  
**questionnaire, do you see on Page A-20 a paragraph 01:14**

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1 entitled or starting with, in a moment, four lines  
2 from the top?  
3 A Yes, yes, I do.  
4 Q Would you read that for me?  
5 A In a moment, I'm going to ask you to vote. 01:14  
6 Before you vote, please think about the alum  
7 treatment – about what the alum treatments would  
8 do, the cost that your household would have to pay,  
9 and the other things you could spend the money on  
10 instead. 01:14  
11 Q Now, these two passages from the survey that  
12 you just read are reminders of alternative  
13 expenditure possibilities; correct?  
14 A Yes, they are.  
15 Q And do you believe that those reminders are 01:14  
16 perfunctory?  
17 A Well, I think that – I think the results of  
18 them was that they were perfunctory. Am I still  
19 going to be using this or –  
20 Q No. 01:15  
21 A Okay. Excuse me. Which is what I say in  
22 the – in my table, that, you know, basically what I  
23 say is that the respondents – what our analysis  
24 showed was respondents did not consider their  
25 incomes, that their willingness to pay was such that 01:15  
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1 the income elasticity was less for lower income  
2 people than for higher income people. So that, to  
3 me, was an indication that people really weren't  
4 processing what their ability to pay was, and that's  
5 really what we're seeing here. 01:15  
6 Q That wasn't exactly my question.  
7 A Okay.  
8 Q So let me come at it again. My question was,  
9 you had agreed with me that the two passages that  
10 you read are reminders of alternative expenditure 01:16  
11 possibilities; correct?  
12 A Yeah, they are.  
13 Q And my question was, are those reminders, in  
14 your view, perfunctory?  
15 A I think my answer was yes, I think they are 01:16  
16 perfunctory in the sense of how do you know whether  
17 they're more than perfunctory than to look at the  
18 outcomes, and so that's essentially what I'm doing  
19 is looking at the outcomes to judge that.  
20 Q Now, the guideline itself gives a 01:16  
21 recommendation as to what the reminder should look  
22 like, doesn't it, in terms of identifying other  
23 likely expenditures, including those on other  
24 environmental goods?  
25 A Yes, it does say that. 01:16  
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Q And isn't that what the Stratus survey did?  
A It did that, but in my mind, it didn't have  
the effect of having people really consider what  
their willingness to pay was.  
Q But my question is, the Stratus survey 01:17  
followed the language of the guideline?  
A Well –  
MR. DEIHL: Object to the form of the  
question.  
A Certainly in terms of one can either look at 01:17  
language or one can look at results, and if you look  
at the language, they meet the language. If you  
look at the results of how people answered the  
question, you get a different picture, and I'm  
focusing on the results in what I say here. 01:17  
Q (By Ms. Moll) And the language of the  
guideline is focused on the language of the survey,  
isn't it?  
A Well, you know, to me – these are general  
guidelines that have been put forth here, and 01:17  
what – the way that I've looked at them is that  
you can either view these as the letter of what's  
said there or you can look and say, okay, this is an  
issue that needs to have consideration within the  
survey, and so it's something that you should try to 01:18  
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evaluate what people do. And so my comments, as  
I've gone through here, really have – really tried  
to focus on, well, what do we see from the survey  
itself, as not that it's simply enough to go through  
pro forma and say, yeah, okay, we met – we checked 01:18  
that box off, but to look and see, okay, what did –  
how did people respond. And so that's – I guess  
that's the distinction I'm drawing here between the  
language of what's really written there in terms of  
the literal language versus what I think is the 01:18  
intent to say this is an important issue and you  
need to look and see whether or not people responded  
to it.  
Q In this guideline, concerning alternative  
expenditure possibilities, doesn't talk about 01:18  
results, does it?  
MR. DEIHL: Object to the form of the  
question.  
A It is a guideline, and so one either – one  
either interprets the guideline literally and says 01:18  
okay, we have to have these words, or one looks at  
the guideline and says, this is an important issue.  
How did people respond to it.  
Q (By Ms. Moll) Well, Dr. Desvousges, I  
understand that that's your interpretation of the 01:19  
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1 guideline. I'm talking about the language of the  
2 guideline itself.

3 A Yeah, and I've indicated that that's what the  
4 language says, yes.

5 **Q So you would read the guideline when it says 01:19**  
6 **this reminder should be more than perfunctory to**  
7 **read the results should be more than perfunctory?**

8 A No, not at all. What -- the way that -- to me  
9 the question is, okay, what does -- what does  
10 perfunctory tell you? Well, perfunctory would tell 01:19  
11 me that in some way, people went through and  
12 seriously considered the language that was provided  
13 as part of this reminder, and so that's the  
14 interpretation that I've given.

15 **Q Let's go to the next guideline called 01:19**  
16 **deflection of transaction value on Page 36. Do you**  
17 **have that before you?**

18 A Yes, I do.

19 **Q Okay. Now, the first sentence of the 01:20**  
20 **guideline says, the survey should be designed to**  
21 **deflect the general warm glow of giving or the**  
22 **dislike of big business away from the specific**  
23 **environmental program that is being evaluated; did I**  
24 **read that correctly?**

25 A Yes, you did. 01:20

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warm glow and felt satisfaction toward saying yes to  
a tax contribution?

MR. DEIHL: Object to the form of the  
question.

A Well, the -- I think there's -- there's two 01:22  
groups of people that are responding to the survey,  
as well. There are the people who actually have  
paid taxes in the last year and didn't get a full  
refund, so that's some element of what's going on  
here, as well, is when you talk about people who are 01:22  
going to pay a tax increase, well, for 35 percent of  
the people in the last year, that was not a relevant  
consideration for them, so they may be saying yes  
and getting a warm glow with the expectation that  
they're not going to make the payment anyway. 01:23

**Q (By Ms. Moll) Okay. I'm going to hand you 01:23**  
**what was marked as Exhibit 12 at David Chapman's**  
**deposition, and this is Appendix D to the Stratus CV**  
**report called main study survey marginals. I'm**  
**handing you page D-14. 01:24**

A Okay.

MR. DEIHL: If I can take a moment to get  
my copy?

MS. MOLL: Sure.

**Q (By Ms. Moll) Okay. Do you have Page D-14 01:24**  
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1 **Q What evidence do you have for the notion that**  
2 **Oklahoma residents feel a warm glow toward paying**  
3 **higher taxes to the state government?**

MR. DEIHL: Object to the form of the  
question. 01:20  
A Well, I think there are -- there are several  
parts to this -- to the idea of what warm glow is.  
It's not -- the idea of warm glow is that  
people -- people get some satisfaction from making a  
contribution towards something that's going to make 01:21  
the environment better, and it's not specific to --  
it's not specific to the resource in question. And  
so to me, the -- what -- when I observe 40 percent  
of the respondents indicating that they're valuing  
other lakes and rivers, to me, that's suggesting 01:21  
that people are looking at this and saying, you  
know, this is an opportunity to say something that's  
going to do a lot for all the lakes and rivers in  
north -- in Oklahoma. And that, to me, is  
consistent with the idea of a warm glow type of 01:21  
response, that you feel good after you said yes,  
that you felt like you've done something for the  
environment.

**Q And is it your opinion that in this survey, 01:22**  
**those respondents who you just identified felt a**

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open?

A Yes, I do.

**Q So looking at Table D-33.**

A Okay.

**Q Now, isn't it true that 86 percent of the 01:24**  
**people who gave a response to the base questionnaire**  
**thought it would cost the amount they were told or**  
**more?**

A Yes. That -- let me double-check. 80 -- 86?  
I see 82.6. The amount you told me and more than 01:25  
the amount, if you add those two together in the  
base survey?

**Q My math may have been off. What percentage do 01:25**  
**you arrive at?**

A It looks like 82.6. Is that right? 01:25

**Q So we're not including the don't know or 01:25**  
**refused responses in that calculation?**

A I -- right. I wouldn't include those in terms  
of the answer to your question.

**Q So as you read Table D-33, Dr. Desvousges, 01:25**  
**what percentage of the people who gave a response to**  
**the base questionnaire thought it would cost the**  
**amount they were told or more?**

A 82.6.

**Q Now, have you analyzed how many of those 01:26**

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1 respondents who voted for the program because it	don't know?
2 would help the environment in general, according to	A I know half of it, but I don't know the second
3 your discussion on this guideline, also said they	half.
4 voted for the program because they believed it would	Q Okay. Let's go down to the guideline called
5 clean up this lake and river? 01:26	advanced approval. And you state in your discussion 01:29
6 A I'm sorry, I don't understand your question.	section on that guideline, Stratus did not seek
7 Q Have you analyzed -- let me try to clean the	advance approval of the defendants, did I read that
8 question up.	correctly?
9 A Okay, thank you. Can I -- do I need to keep	A Yes.
10 this open or -- 01:26	Q Now, advanced approval by the defendants is 01:30
11 Q No. That's probably not a good place to put	not a requirement of the NOAA panel guidelines;
12 it.	correct?
13 A Can I hand it back to you? Thank you.	A I'm sorry? I'm looking at it. And on Page
14 Q (By Ms. Moll) Let me rephrase my question.	36?
15 A Thank you. 01:27	Q Why don't you go ahead and read the guideline 01:30
16 Q Have you analyzed -- withdrawn. Let's go back	part.
17 to the chart on Page 83 in your report.	A Okay. It says, since the design of the CV
18 A Okay.	survey can have a substantial effect on the
19 Q So looking under the guideline, deflection of	responses, it is desirable that if possible,
20 transaction value? 01:27	critical features be pre-approved by both sides in a 01:30
21 A Uh-huh.	legal action with arbitration and/or experiments
22 Q Now, you state here that the follow-up	used when disagreements cannot be resolved by the
23 questions indicate that many respondents voted	parties themselves.
24 before the program because it would help the	Q Now, the guidelines use the phrase if
25 environment in general? 01:27	possible; correct? 01:30
126	128
1 A Uh-huh.	A It does say those words, if possible.
2 Q Do you mean for the program?	Q So are you suggesting that Stratus should have
3 A Yes.	sought advance approval of the defendants regarding
4 Q So my question is, have you analyzed how many	the entire survey?
5 of those respondents who voted for the program 01:27	A I think the way that -- the way that I read 01:31
6 because it would help the environment in general	this is is that the critical features be
7 also said they voted for the program because they	pre-approved by both sides in the legal action. So
8 believed it would clean up this lake and river?	to me, that would be the critical design features
9 A Okay. We certainly analyzed the people that	and questionnaire features in the survey would have
10 indicated that they were valuing something beyond 01:28	been agreed upon. 01:31
11 the two -- beyond Tenkiller Lake and the Illinois	Q And would you expect the defendants to have
12 River. What -- and that was part of the recoding	given their approval?
13 that we did in terms of looking at what happens to	MR. HIXON: Object to form.
14 willingness to pay when you take those people, who	A I don't know what the defendants would have
15 said that they were valuing something else, and 01:29	done. 01:31
16 voted for the program, and changed their response	Q (By Ms. Moll) Are you aware of any litigation
17 from a yes to a no, so that's certainly an analysis	in which defendants gave their approval to various
18 that we did. Whether or not -- I don't know whether	features of the survey?
19 or not any of those people that we recoded who gave	A I'm assuming in your question that you don't
20 that answer might have also given the other answer. 01:29	want to include cooperative assessments where 01:32
21 I don't know the answer to that. We focused	there's a threat of litigation that's out there --
22 primarily on the fact that they were responding to	Q Correct.
23 this question to me, which was an indicator that	A -- is that correct? This is actual
24 they were valuing something beyond what was there.	litigation --
25 Q But with regard to the question I asked, you 01:29	Q Correct. 01:32
127	129

<p>1 A — is that correct? I'm not aware of any.</p> <p>2 <b>Q Okay. Let's go down to the guideline that you</b></p> <p>3 <b>refer to as scope test.</b></p> <p>4 A Uh-huh.</p> <p>5 <b>Q Does having a large sample size introduce 01:32</b></p> <p>6 <b>bias?</b></p> <p>7 A No, I wouldn't say that it introduces bias.</p> <p>8 <b>Q And does having a large sample size create a</b></p> <p>9 <b>statistical artifact?</b></p> <p>10 A I think it can do that. 01:32</p> <p>11 <b>Q When you use that phrase statistical artifact</b></p> <p>12 <b>in your discussion relating to the scope test</b></p> <p>13 <b>guideline, what do you mean by that term?</b></p> <p>14 A Sure. This is — this is to some extent what 01:33</p> <p>15 the sum of the NOAA panel members talked about when</p> <p>16 they were providing their comments. I think those</p> <p>17 comments were in regards to proposed NOAA</p> <p>18 regulations that some members then put forth some</p> <p>19 additional responses, and they talked about the fact</p> <p>20 that you can have — that you can have statistically 01:33</p> <p>21 significant differences that aren't meaningful.</p> <p>22 With a large enough sample size, you can always</p> <p>23 detect a difference between two versions, and is</p> <p>24 basically what they're talking about. And so to the</p> <p>25 extent that you come up with a difference, even 01:33</p> <p style="text-align: center;">130</p>	<p>MR. HIXON: Same objection.</p> <p>A In terms of a hypothetical that you're putting</p> <p>forth here, is — is that the way you're asking</p> <p>this?</p> <p><b>Q (By Ms. Moll) Yes. 01:36</b></p> <p>A Okay. Because — it — there's — there are a</p> <p>lot of things that are going through my mind in</p> <p>terms of how to respond to that. Hypothetically, if</p> <p>you have — if you have a lake and a river and it's</p> <p>the same — and you only have the lake, is that the 01:36</p> <p>idea or — could you — I'm sorry, I'm having</p> <p>trouble with this question, if you could repeat it</p> <p>for me again.</p> <p><b>Q Do you think people view a polluted lake and a</b></p> <p><b>polluted river as a bigger problem than just a 01:36</b></p> <p><b>polluted lake?</b></p> <p>MR. HIXON: Same objection.</p> <p>A I guess maybe what I'm having trouble with is</p> <p>the bigger problem in terms of do you mean --</p> <p>certainly, I think you could say that there's — 01:37</p> <p>it's — there are two resources impacted instead of</p> <p>one, I think you could -- you can say that. Whether</p> <p>or not it's a bigger problem I think would depend on</p> <p>the specific circumstances.</p> <p><b>Q (By Ms. Moll) What is the null hypothesis in 01:37</b></p> <p style="text-align: center;">132</p>
<p>1 thought it might be statistically significant, I</p> <p>2 think they talk about that it needs to be a</p> <p>3 meaningful difference in terms of whether there's a</p> <p>4 difference between the commodities that are at issue</p> <p>5 and whether or not that difference that you've 01:34</p> <p>6 measured is a result of simply because you've got a</p> <p>7 large enough sample size, you're going to detect a</p> <p>8 difference, or whether it was meaningful and it was</p> <p>9 a real difference.</p> <p>10 <b>Q Do you think people view a polluted lake as — 01:34</b></p> <p>11 <b>withdrawn. Do you think people view a polluted lake</b></p> <p>12 <b>and river as a bigger problem than just a polluted</b></p> <p>13 <b>lake?</b></p> <p>14 MR. HIXON: Object to form.</p> <p>15 A The — that question is a little vague in 01:34</p> <p>16 terms of the relative sizes of the rivers, the</p> <p>17 lakes, you know, as to whether or not one is more —</p> <p>18 that much more than the other might depend upon how</p> <p>19 big the river was, how big the lake was, so I'm not</p> <p>20 sure I can answer your question without a little bit 01:35</p> <p>21 more -- if you could be a little bit more specific.</p> <p>22 <b>Q (By Ms. Moll) Assuming the lake is the same</b></p> <p>23 <b>in my question, do you believe that people view a</b></p> <p>24 <b>polluted lake and a polluted river as a larger</b></p> <p>25 <b>problem than just a polluted lake? 01:35</b></p> <p style="text-align: center;">131</p>	<p><b>the scope test?</b></p> <p>A I believe that the null hypothesis is that one</p> <p>is -- that the base version is less than the -- the</p> <p>scope version is less than the base version.</p> <p><b>Q And what is the alternative hypothesis? 01:38</b></p> <p>A That they would be the same, I think.</p> <p><b>Q Dr. Desvousges, is it your expert opinion that</b></p> <p><b>the correct statistical test of a null hypothesis</b></p> <p><b>that two parameters are equal is to determine</b></p> <p><b>whether the two confidence intervals for the two 01:39</b></p> <p><b>parameter estimates overlap?</b></p> <p>A The idea of having overlapping confidence</p> <p>intervals to me is really a -- it's really somewhat</p> <p>independent of the particular hypothesis test that</p> <p>you've set forth. It's just simply looking to see, 01:39</p> <p>when you look at the outcomes that you get from the</p> <p>standard errors and the means there, when you put --</p> <p>when you construct those confidence intervals, are</p> <p>they really separate or are they not, and it's</p> <p>really more of an intuitive rather than a 01:39</p> <p>statistical concept that a lot of times what I try</p> <p>to do is -- when I'm testing things, I've got the</p> <p>formal language and everything, but I try to have</p> <p>figures where I show the confidence intervals, and</p> <p>when the two are different, you know, when you 01:40</p> <p style="text-align: center;">133</p>

<p>1 actually run the statistical test and you get a 2 difference, then the two confidence intervals, you 3 know, one is here, one is higher and one is lower 4 and they don't overlap. And so intuitively, what -- 5 what I'm talking about when I talk about overlapping 01:40 6 confidence intervals is is that in some situations 7 what you can have is that you may have the upper end 8 of one and the lower end of the other overlap in 9 terms of just kind of graphical presentation. 10 <b>Q But the analysis that you just described is 01:40</b> 11 <b>not a statistical test; correct?</b> 12 A No, it's not a statistical test. It's a way 13 of just simply looking at the statistical outcomes 14 that come out of the statistical tests to see 15 whether or not they're -- whether or not these 01:41 16 confidence intervals are really separate from each 17 other. 18 <b>Q Is a t-test a way to test for equivalence of</b> 19 <b>means?</b> 20 A Yes. 01:41 21 <b>Q Did you perform a t-test?</b> 22 A I have to -- I don't know what -- Dr. Rausser 23 and I, in going through and looking at those, I'm 24 trying to remember whether he actually did formally 25 did do t-tests. I'm not sure. We talked about -- 01:41 134</p>	<p><b>Q The impact on water-based recreation.</b> A Oh, on water-based recreation. From increased phosphorus loadings or from -- or is it just recreation? I'm having a little trouble, I guess, with your question. 01:44 <b>Q Well, tell me in your own words what you were</b> <b>examining in Chapter 2.</b> A All right. What we were looking at in Chapter 2 was several different data sources to try to provide information on whether or not there was 01:44 sufficient information to be able to determine whether increased phosphorus loadings had impacted -- or the alleged increase in phosphorus loadings had impacted water-based recreation and in terms of the Illinois River and Tenkiller Lake, 01:44 specifically. <b>Q Now, you have conducted recreation demand</b> <b>studies throughout your career using revealed</b> <b>preference data; is that correct?</b> A Yes. 01:44 <b>Q Can you identify those studies for me?</b> A Do you want to go to the resume again? <b>Q Sure.</b> A Okay. Are we finished with NOAA panel? <b>Q Yes, that's fine. 01:45</b> 136</p>
<p>1 we talked about this issue, and I don't -- I don't 2 recall whether there was a t-test that was done or 3 not. 4 <b>Q What did you talk to Dr. Rausser about on that</b> 5 <b>issue? 01:42</b> 6 A Well, we were just talking about the -- it was 7 really the broader issue in terms of the comparison 8 of base and scope versions, and then he was the one, 9 given his econometric expertise, that actually 10 performed -- whatever specific tests that were done, 01:42 11 he would have been the one that would have done it. 12 <b>Q I want to turn to Chapter 2 of your report.</b> 13 A Okay. 14 <b>Q And Chapter 2 of your report examines the</b> 15 <b>impact on water-based recreation at lakes in 01:43</b> 16 <b>Oklahoma; correct?</b> 17 A I'm sorry, would you mind repeating the 18 question? 19 <b>Q Sure.</b> 20 A I lost it in the process of getting open to 01:43 21 the right chapter. 22 <b>Q Chapter 2 of your report examines the impact</b> 23 <b>on water-based recreation at lakes in Oklahoma;</b> 24 <b>correct?</b> 25 A Analyzes the impacts of -- 01:43 135</p>	<p>A Can I move it up out of the way? Would you mind if I just moved both of these just -- do we have a place that we can put them? Thank you very much. Okay. I'm trying to -- okay. We can either start at the beginning of the key projects -- why 01:45 don't we do that. Maybe it's easier. I usually start at the end for some reason. I don't know why I was doing that. The key project starts on, what is it, Page 2 of the resume, if it had a page number? Could -- are you including ones that you 01:46 use existing data or ones that involve data collections? <b>Q Both.</b> A Both, okay. So the first one -- the first one that probably shows up is benefit cost analysis of 01:46 the 316(b) Regulatory Alternatives in California. It's, I guess, what, four from the bottom. There is also a recreation survey, angler survey that was done for the lower Passaic River. This specifically refers to a creel and angler survey bullet, but 01:47 there was a companion survey that was done that was a broader recreation survey that there was a paper written from. The Honeywell Use Compensatory Restoration involved some recreation sur -- recreation demand analysis, recreation valuation 01:47 137</p>

1	analysis. The Saginaw Bay and River damage		recreators similar to the Passaic River study. We	
2	assessment on the next page would be one. The		collected data on recreational use by the household	
3	Lavaca Bay damage assessment would be another.		over the course of a year or longer. Fox River was	
4	Clark Fork Basin in Montana would be another. Fox		a household screen for – I think for anglers, if I	
5	River, natural resource damage assessment would be	01:48	remember correctly, so we started with households	01:52
6	another. I'm not sure what I can say about the		and we asked whether or not people were anglers, and	
7	Kalamazoo River at this point in time in terms of		then we collected data on individual anglers over a	
8	what information has been made public and what has		five or six month period. St. Lawrence, household,	
9	not been made public. The St. Lawrence involves a		included anglers, and I can't remember if it was	
10	recreation survey. The Martinez involved transfer,	01:49	outdoor recreators as well or not. Anglers,	01:53
11	so some kind of recreation evaluation. Same for		particularly, I remember, individual level. All	
12	Gasconade River and Arthur Kill, and then the		the – I don't believe we had any individual level	
13	comparison of alternative benefits approaches,		data for any of the three oil spills that were	
14	that's the Monongahela study.		mentioned there. It was all transfers of one type	
15	<b>Q So the list that you've just identified</b>	01:49	or another. The Monongahela was too – it was	01:53
16	<b>capture all of the recreation demand studies that</b>		individual level data, where we didn't screen for	
17	<b>you've done that used revealed preference data?</b>		anglers, but we collected information on angling	
18	A Yeah, defining recreation demand broadly, yes.		trips from the households that we did interview, and	
19	<b>Q Okay. I'd like to go through each of these</b>		we may have even – it was more than just angling.	
20	<b>studies and have you identify for me what kind of</b>	01:49	I misspoke. It was angling and other recreation –	01:54
21	<b>data was used, and let me clarify what I mean by</b>		it was recreation trips.	
22	<b>that.</b>		<b>Q Now, for those studies where you used</b>	
23	A Sure.		<b>individual data, was a random utility model</b>	
24	<b>Q So for each study, I'd like for you to tell me</b>		<b>estimated?</b>	
25	<b>whether individual level data was used, zonal data</b>	01:50	A Yes.	01:54
	138		140	
1	or aggregate attendance level data.		<b>Q Now, you did not do a benefits transfer on</b>	
2	A Okay. Or neither.		<b>recreation impacts on Lake Tenkiller; correct?</b>	
3	<b>Q Fine.</b>		A That's correct.	
4	A Is that okay?		<b>Q Why not?</b>	
5	<b>Q That's fine. So let's go through the list, if</b>	01:50	A Why not?	01:55
6	<b>we could.</b>		<b>Q Yes.</b>	
7	A Sure. The 316(b) study used -- it used an		A The -- I think there were -- I think there	
8	existing demand equation, is what I recall, and we		were two reasons for -- for not doing one. The	
9	didn't have any unique data that was collected for		first was the information that we gained from the	
10	that study. The creel and angler survey or the	01:51	recreation intercept survey that Stratus did in	01:55
11	Passaic River survey specifically collected		2000 -- the summer of 2006. To me, that survey	
12	household data, collected data from recreators		indicated that users of the Illinois River and	
13	within a household, so it was a household survey		Tenkiller Lake were not impacted by water quality	
14	screened to get data from recreators. Onondaga Lake		changes based on their responses to the questions	
15	was probably, what I recall, there was no -- I don't	01:51	that were asked in that survey.	01:55
16	remember there being any unique data to Onondaga		The second reason -- the second reason was	
17	Lake. There was -- I think it was more of a		that we collected the visitation -- obtained the	
18	transfer of existing demand functions for that one.		visitation information on the various Corps of	
19	Let's see, the next one was Saginaw; is that right?		Engineer lakes from the Corps of Engineers, and	
20	Is that the next one on your list?	01:52	that, to me, further supported the notion that	01:56
21	<b>Q Yes.</b>		recreation, particularly at Tenkiller Lake, was	
22	A That was another transfer where there wasn't		growing substantially. So based on those two	
23	individual data. Lavaca Bay was an angler survey		things, and to somewhat -- the telephone survey, as	
24	where we collected data on individual anglers.		well, that Stratus did, but primarily the recreation	
25	Montana was a household survey where we screened for	01:52	intercept survey, and then the information that we	01:56
	139		141	







1	A Yes, we were.			evaluate recreation on all Corps sites in the United	
2	<b>Q And my last question to you was, are the data</b>			States, and this is the dataset that they maintain	
3	<b>collected by the Corps actual counts or are they</b>			for that purpose. So from their standpoint, they	
4	<b>estimates, and I believe your response is they were</b>			must view these data as being something that they	
5	<b>estimates? 02:24</b>			can use for that purpose. 02:27	
6	A In my view, I think they are estimates.			<b>Q Okay. Would you please turn to Figure 2.1 in</b>	
7	<b>Q Okay.</b>			<b>your report, which is on Page 15?</b>	
8	A And they're -- that's the way that I've			A Okay. Page 15?	
9	interpreted them.			<b>Q Correct.</b>	
10	<b>Q And if they are, in fact, estimates, there 02:24</b>			A I have it. 02:27	
11	<b>must be a margin of error; correct?</b>			<b>Q Okay. I'd specifically like to direct your</b>	
12	A I -- every -- every estimate would have some			<b>attention to what this figure represents in terms of</b>	
13	error associated with it.			<b>Lake Eufaula.</b>	
14	<b>Q And do you know what the margin of error is</b>			A Uh-huh.	
15	<b>for Lake Tenkiller? 02:24</b>			<b>Q Between the years 2002 and 2005? 02:28</b>	
16	A No, I don't know what it is for any of			A Between 2002?	
17	these -- any of these sites. I'm -- my view is is			<b>Q Yes.</b>	
18	that we've got the same data collection that's going			A And 2005?	
19	on.			<b>Q Yes.</b>	
20	<b>Q And isn't it likely that the margin of error 02:25</b>			A Yeah. 02:28	
21	<b>in counting visitation is proportional to the total</b>			<b>Q Okay.</b>	
22	<b>attendance?</b>			A All right.	
23	A I don't know if that's necessarily the case.			<b>Q In your professional opinion, why did</b>	
24	I think that there -- it could increase with			<b>visitation at Lake Eufaula, as estimated by the</b>	
25	attendance, but it could also be a function of the 02:25			<b>Corps of Engineers, decrease by approximately 1.75 02:28</b>	
	150			152	
1	nature of the activities that take place. It could			<b>million between those years 2002 and 2005?</b>	
2	be a function of the -- just the physical layout of			A Well, that was the reason -- one of the	
3	the lake itself.			reasons why we estimated the models to try to	
4	<b>Q Now, if the error in counting was proportional</b>			understand what were the factors that were	
5	<b>to the total attendance, that would make the 02:25</b>			influencing recreational uses. I do know that there 02:28	
6	<b>attendance data heteroskedastic; correct?</b>			were some issues at Eufaula for a couple of years	
7	A It would have -- yes, it would, it would make			related to lake levels and fluctuation in lake	
8	it heteroskedastic.			levels, and fluctuation in lake levels, Eufaula was	
9	<b>Q And did you test for heteroskedasticity on the</b>			more subject to those kinds of fluctuations than	
10	<b>econometric model you estimated? 02:26</b>			some of the other lakes, and it wouldn't surprise me 02:28	
11	A I don't recall whether we did or not. I know			that some of that decline over that period of time	
12	that we used the log form of the -- of the dependent			was due to some fluctuating lake levels, and that's	
13	variable.			one of the reasons why we put that variable in the	
14	<b>Q Now, heteroskedasticity would affect the</b>			aggregate visitation model that we estimated.	
15	<b>estimation; correct? 02:26</b>			<b>Q Do you know if there was any change in water 02:29</b>	
16	A Well, it depends on what it is that you're			<b>quality at Lake Eufaula between 2002 and 2005?</b>	
17	using the estimation for.			A Well, I'd have to -- I don't recall	
18	<b>Q Now, if there were significant errors in the</b>			specifically for Eufaula during that period as to	
19	<b>Corps' attendance data, that could invalidate your</b>			what was going on there. I focused -- I focused	
20	<b>econometric analysis in Chapter 2, couldn't it? 02:26</b>			more on Tenkiller than I did on Eufaula for that 02:29	
21	A Well, significant errors may be present in			particular question.	
22	almost any data. I think the thing that -- you			<b>Q Did you measure water quality at these lakes?</b>	
23	know, what I do know is that these data were			A I didn't, but we had measures of water	
24	provided by the Institute for Water Resources at the			quality. And maybe -- we measured water clarity is	
25	Corps of Engineers, and they are the people who 02:27			what we measured. That was the variable water 02:30	
	151			153	

1 quality measure that we had, so I'd be specific  
2 about that.

3 **Q Okay. Would you identify for me the specific**  
4 **individuals who collected the data for your**  
5 **recreation regression?** 02:30

6 A Collected the data. Besides the Corps of  
7 Engineers?

8 **Q Correct. Who on your team.**

9 A The -- Holly Michael was the main person who  
10 pulled these data together for me. 02:30

11 **Q Was there anyone else?**

12 A And Chance may have assisted her some, I don't  
13 know exactly, but I know that Holly was the one that  
14 was -- was the one that I tasked with that and that  
15 I interacted with, but it's possible, too, that 02:31  
16 sometimes Holly would contact -- call Anne and say,  
17 would you help me with X, Y or Z, so I don't know  
18 that. I know that Holly was the main person.

19 **Q And do you know when she collected the data?**

20 A Starting February and -- February and March. 02:31

21 **Q Of 2009?**

22 A Yeah, of 2009. It was over that period of  
23 time.

24 **Q Who was responsible for the specification of**  
25 **the model?** 02:31

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**regression?**

A No, not really. I wasn't really sure what I  
was going to do at that particular point in time. I  
wanted to -- I wanted to be in a position to where I  
had some familiarity with -- with obviously 02:33  
Tenkiller Lake and the Illinois River. I wasn't  
sure what I was going to do at that point in time.

**Q Okay. Now, in September of 2008, did you have**  
**any reason to believe that water quality affected**  
**recreation?** 02:34

A That I personally observed on my trip?

**Q Did you have any reason to believe at that**  
**time that water quality affected recreation at those**  
**lakes?**

A No, I did not. 02:34

**Q Now, you testified before that Holly Michael**  
**was the individual who collected the data, and maybe**  
**Ms. Chance?**

A Yes.

**Q Okay. Who ran the Stata model?** 02:34

A Holly Michael did.

**Q And when did she do so?**

A It would have been in March.

**Q And did you review the code used to run the**  
**model?** 02:35

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1 A I was.

2 **Q Did you personally run or replicate the**  
3 **regression?**

4 A I reviewed the -- I don't personally run any  
5 models. I hire staff who -- who run the models. I 02:32  
6 review the results of the models. I have people  
7 look at the code that they've used. We go through  
8 the models, the results of the models, but I don't  
9 run the models.

10 **Q Now, what was the purpose of your -- the site** 02:32  
11 **visits we talked about earlier in September of 2008**  
12 **when the data wasn't collected until February and**  
13 **March of '09?**

14 A Sure. The purpose of the site visits was  
15 really just to gain some personal familiarity with 02:32  
16 some of the sites in this area. I'd been to some  
17 other Corps sites in other parts of the country at  
18 different points in time, but I had not been to any  
19 of the Oklahoma sites, and so it was an opportunity  
20 to come out and see the different lakes and, you 02:32  
21 know, be able to -- to at least get feet on the  
22 ground, eyes -- eyes looking at facilities and, you  
23 know, layout and things like that.

24 **Q And in September of 2008 when you did the site**  
25 **visits, were you anticipating doing a recreation** 02:33

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A I had other people review the specific code.  
I don't review code. I go through and talk about  
what it is that I want to have in there.

**Q So the other people that reviewed the code,**  
**who are they?** 02:35

A Probably would have been Kristi, she's the  
most likely person that Holly would have had take a  
look at the code.

**Q Do you know whether, in fact, Kristi did look**  
**at the code?** 02:35

A I'm not sure specifically based on my own  
knowledge.

**Q Did you personally see the output generated by**  
**the computer?**

A I saw -- yes, I did, I did see that. 02:35

**Q And did you analyze it?**

A Yes, I did.

**Q Let me hand you what's been marked as Exhibit**  
**5, and I will represent to you that this was**  
**produced from your considered materials, and the** 02:37  
**electronic file name is Desvousges, Rausser**  
**002862-lakedata.XLS.**

A Okay.

**Q And so just so the record is clear, this was**  
**an Excel spreadsheet that we received in electronic** 02:37

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<p>1 form, and as you can see, I've clipped three parts 2 together – 3 A Yes. 4 <b>Q – it all came from the same spreadsheet. The</b> 5 <b>first page represents the Excel spreadsheet tab that</b> 02:37 6 <b>was labeled visitation.</b> 7 A Yes. 8 <b>Q The second grouping, which is Pages 2 through</b> 9 <b>4, represent the tab labeled data, and the final</b> 10 <b>five pages represent the tab labeled lake levels,</b> 02:38 11 <b>okay?</b> 12 A Yes, I see that. 13 <b>Q Okay. Do you recognize this spreadsheet?</b> 14 A I certainly recognize the first page, and I 15 don't know that I ever printed out the spreadsheet 02:38 16 in this particular form and looked at it like this, 17 but this looks to me to be the data that would have 18 been used in the analysis. 19 <b>Q Okay. Who did the data entry in this</b> 20 <b>document?</b> 02:38 21 A Holly Michael. Well, let's be – let me not 22 overspeak. This came from the Corps? 23 <b>Q Well, this came out of your considered</b> 24 <b>materials.</b> 25 A Okay, understood, understood, my considered 02:39 158</p>	<p><b>within this exhibit?</b> A Let me be clear in terms of like the water quality data in here on mean clarity and minimum clarity and maximum clarity, those data came also, I believe, in a spreadsheet from the Oklahoma Water 02:40 Resources Board or commission, Oklahoma Water Resources – I think it's commission. <b>Q Board.</b> A Board. Did I have it right the first time? Okay. So they provided those data over those years, 02:40 and, you know, my guess is is that once they provided that information, they were just copied into – into the same spreadsheet. The other data was probably – was probably entered by Holly herself. 02:41 <b>Q Okay. So just so I understand, the</b> <b>information relating to the variables, starting with</b> <b>lake level and going through shoreline, would have</b> <b>been entered by your staff; is that right?</b> A That's – that's my – that's my suspicion, 02:41 yes. <b>Q Okay. And then if you look at the third group</b> <b>of documents in this exhibit, this was the tab</b> <b>labeled lake levels.</b> A Uh-huh. 02:41 160</p>
<p>1 materials, but they provided us with this 2 spreadsheet. So there was no data entry. We had an 3 Excel spreadsheet that came from the Corps of 4 Engineers. This is that Excel – this is just a 5 page from that Excel spreadsheet, so there was no 02:39 6 data entry associated with this one at all. 7 <b>Q Okay, thank you.</b> 8 A Sure. 9 <b>Q And then if you turn to the second group, the</b> 10 <b>one relating to the tab that was labeled data?</b> 02:39 11 A Uh-huh. 12 <b>Q Do you recognize that document?</b> 13 A The one that – that's – I think this is the 14 one that I said earlier that this looks to be the 15 variables that would have been in the – in the 02:39 16 model. 17 <b>Q I'm sorry, I couldn't hear you.</b> 18 A Yeah, I don't look – I don't recognize it in 19 this form, but these are the variables that were 20 included in the model, so I'm assuming these are the 02:40 21 data. 22 <b>Q So this would have been – the tab would have</b> 23 <b>been something that your staff generated?</b> 24 A Yes, that's correct. 25 <b>Q Okay. And then what about the third grouping</b> 02:40 159</p>	<p><b>Q Do you recognize this?</b> A I don't know that I ever looked at the exact level data, but I presume that that's what this is. It was used in the calculation of the lake level variable that's in the model. 02:41 <b>Q Is it your understanding that your staff would</b> <b>have entered this data in this third section of the</b> <b>exhibit?</b> A The data – I don't know whether it was actually physically hand entered or whether it was 02:42 gotten in a file form off of the Corps' Web site or exactly what, so somehow or another it came – it got into this particular format. It may have been hand entered or it may have been taken off the Web. <b>Q Okay. I think you testified earlier, and I</b> 02:42 <b>believe it is reflected in your report, that you</b> <b>used 22 lakes in the regression model?</b> A I believe that's correct, yes. <b>Q Okay. Looking at this exhibit, can you</b> <b>confirm that that's correct?</b> 02:42 A I believe that's correct. There were – there were some of the lakes that we did not use, and – okay. Okay. There are more sites – there's more than 22 on this page from the Corps of Engineers. I think there's 27 or 28, I think, my counting or 02:43 161</p>

<p>1 whatever, but as we say in the report here, we use 2 the 22 Corps of Engineer lakes in Oklahoma that have 3 the data on the lake levels, so we had some of the 4 lakes that are on this first page that we didn't 5 have lake level data for, so we did not include 02:44 6 those in the model. I don't know if that answers 7 your question or not. 8 <b>Q You'll have to forgive me.</b> 9 A Sure. 10 <b>Q If you will turn to the second portion of this 02:45</b> 11 <b>exhibit and help me get to how you used 22 lakes,</b> 12 <b>understanding that you used those lakes for which</b> 13 <b>you had lake level information.</b> 14 A Okay. 15 <b>Q According to your earlier response. 02:45</b> 16 A All right. I have not looked at this 17 spreadsheet in this way. Okay. So this is going to 18 take me -- okay. The -- okay. The lakes -- the 19 lakes are numbered -- oops. The lakes, if we look 20 at the second column, the lakes are, you know, Lake 02:45 21 1, Lake 2, Lake 3, Lake 4, Lake 5, and so you can 22 see that when you get to Lake 5, there's no data on 23 Lake 5 other than visitation data, so Lake 5 was not 24 used. We go over here to Lake 16, whatever that is 25 on the list, that is not used. Lake 18 is not used. 02:46 162</p>	<p>that? We think -- we think that might be Broken Bow? <b>Q Well, am I correct that the second column of</b> <b>the second portion of this exhibit where it has the</b> <b>lake and then they're numbered 1 through 27? 02:48</b> A Uh-huh. <b>Q That those numbers correspond with the order</b> <b>in which the lakes are identified on the first page</b> <b>of this exhibit?</b> A That's correct, that's my understanding, too. 02:48 <b>Q Okay.</b> A And I -- and if Broken Bow is the third one, then I'm pretty sure that Broken Bow was included in the analysis during that -- yeah, and I'd have to go back and look and see for sure, but I'm pretty sure 02:49 that it was. <b>Q So by my calculation, even if Broken Bow were</b> <b>included, and we're not sure that it was, I only get</b> <b>to 21. So I'm trying to understand how many lakes</b> <b>were, in fact, used in the model. 02:49</b> A All right. 1, 2, 3, 4 -- 1, 2, 3, 4 -- okay. Clearly 5 was not -- not included. Oh, I shouldn't be marking on the Exhibit, should I? I'm sorry. 5 was not included. There's no data on 5, so we're pretty sure that that one was not in there. Lake 02:50 164</p>
<p>1 Lake 20 is not used. Lake 24 is not used. Lake 26 2 is not used, so I didn't -- I didn't count the 3 number of ones that were not used. I'm sorry, one, 4 two, three -- 5 <b>Q Dr. Desvousges -- 02:46</b> 6 A Four, five. 7 <b>Q If I could ask you one question first.</b> 8 A Sure. 9 <b>Q Going back to Lake No. 3.</b> 10 A Sure. 02:47 11 <b>Q This spreadsheet reflects lake level</b> 12 <b>information for years 2000 to 2003, but not 2004</b> 13 <b>through 2007, so would that have been a lake that</b> 14 <b>was included?</b> 15 A I -- let me see, one, -- I don't know 02:47 16 specifically. Two, three, four, five. It looks 17 like -- it's possible that that one was included and 18 that there was some -- I'd have to go back and look 19 and see, I'm not sure. But clearly, you know, we 20 know that some of these are not included because 02:48 21 there's complete blanks in there. 22 <b>Q As you sit here today, you're not sure about</b> 23 <b>Lake 3?</b> 24 A I'm not sure about Lake 3, as to whether or 25 not -- whether or not Lake 3 was included. What is 02:48 163</p>	<p>16, there's no data, so that's two. Lake 18, there's no data, that's three. There's no data on 24, so that's four, so that takes us from 27 to 23; is that correct? And I suspect that the other one that's not included is Lake 20, so that would be 02:51 five. <b>Q I don't want to spend any more time on this,</b> <b>but I think we're doing our math differently. I'm</b> <b>still not getting to 22.</b> A Well, I thought -- okay. I thought I tried to 02:51 subtract 5 from 27, and that should get us 22. <b>Q Let's just close the circle.</b> A Sure. <b>Q From what I can tell from the second part of</b> <b>this exhibit, there is no data reported here for 02:51</b> <b>lake levels for part of Lake 3, and we're not sure</b> <b>whether that was included, for Lake 5, Lake 16?</b> A Right. <b>Q Lake 18?</b> A Right. 02:52 <b>Q Lake 20?</b> A Yes. <b>Q Lake 24 and Lake 26?</b> A Right. But just because there is some data that's not -- not there doesn't mean that it wasn't 02:52 165</p>



<p>1 necessarily included in the analysis. Now, clearly</p> <p>2 the ones that have no data, we can agree on those,</p> <p>3 and I'd have to go back and look at the others to</p> <p>4 know for sure how they were treated.</p> <p>5 <b>Q Now, do you know whether the missing data from</b> 02:52</p> <p>6 <b>the second part of this exhibit for Lake No. 3,</b></p> <p>7 <b>Broken Bow, exists?</b></p> <p>8 A In terms of the -- let's see, for Broken Bow.</p> <p>9 What's not there are campsites, boat ramps, beaches;</p> <p>10 is that right? Am I looking at that correctly? 02:53</p> <p>11 <b>Q Correct.</b></p> <p>12 A And then there are some years in which lake</p> <p>13 levels are missing.</p> <p>14 <b>Q Do you know whether that data is available?</b></p> <p>15 A I don't know. 02:53</p> <p>16 <b>Q Do you know anything about the water clarity</b></p> <p>17 <b>at Broken Bow?</b></p> <p>18 A It's good. If I recall correctly, it's the</p> <p>19 highest in the sample.</p> <p>20 <b>Q Now, assuming the missing data in the table</b> 02:53</p> <p>21 <b>for Broken Bow is available and it shows that Broken</b></p> <p>22 <b>Bow has high water clarity, couldn't including it in</b></p> <p>23 <b>your analysis have affected your results?</b></p> <p>24 A Well, I -- I believe it was included, so I</p> <p>25 certainly -- so I think it's reflected in there, but 02:54</p> <p style="text-align: center;">166</p>	<p>metric they use is person trips.</p> <p><b>Q Okay.</b></p> <p>A Yes.</p> <p><b>Q All right. So looking at Lake Tenkiller.</b></p> <p>A Uh-huh. 02:57</p> <p><b>Q I think we talked about earlier that for</b></p> <p><b>purposes of the second portion of the exhibit, the</b></p> <p><b>lake numbers correspond to how they appear on the</b></p> <p><b>first page; correct?</b></p> <p>A I -- that's my suspicion. Okay. 02:57</p> <p><b>Q Okay.</b></p> <p>A But I -- well, I mean, yeah, we could -- we</p> <p>could confirm that.</p> <p><b>Q So looking at the first page, Lake Tenkiller</b></p> <p><b>would be lake No. 23; correct?</b> 02:58</p> <p>A That's what I was going to check. Yes.</p> <p><b>Q Okay. So then turning to the second part of</b></p> <p><b>the exhibit.</b></p> <p>A Uh-huh.</p> <p><b>Q And turn with me to Lake No. 23.</b> 02:58</p> <p>A I'm looking at it.</p> <p><b>Q Okay. Now, the first column of this portion</b></p> <p><b>of the exhibit is labeled visits; do you see that?</b></p> <p>A I do see that.</p> <p><b>Q Okay. So looking at Lake No. 23 for the year</b> 02:59</p> <p style="text-align: center;">168</p>
<p>1 I would have to go back and double-check to see</p> <p>2 exactly what was done with those missing</p> <p>3 observations, because it's possible that -- I just</p> <p>4 don't know in terms of that. But I do recall</p> <p>5 specifically that the -- Broken Bow had the highest 02:54</p> <p>6 water clarity levels, and Tenkiller Lake had the</p> <p>7 second highest in the sample.</p> <p>8 <b>Q But as you sit here today, you don't know for</b></p> <p>9 <b>sure whether Broken Bow was included in the model?</b></p> <p>10 A No, I don't remember, I do not. 02:54</p> <p>11 <b>Q Okay. Bear with me for a moment.</b></p> <p>12 A Sure.</p> <p>13 <b>Q Let's stick with the same exhibit.</b></p> <p>14 A Okay. Exhibit 5?</p> <p>15 <b>Q Yes, please. Okay. And the first page of</b> 02:56</p> <p>16 <b>this exhibit, as I mentioned before, was from an</b></p> <p>17 <b>Excel spreadsheet where the tab was labeled</b></p> <p>18 <b>visitation.</b></p> <p>19 A Yes.</p> <p>20 <b>Q So is my understanding correct that the</b> 02:56</p> <p>21 <b>columns go by year from 2000 to 2007, and then the</b></p> <p>22 <b>numbers indicated for each lake represent the number</b></p> <p>23 <b>of visits reported by the U.S. Army Corps of</b></p> <p>24 <b>Engineers?</b></p> <p>25 A Yes, visits measured in terms of, I think the 02:57</p> <p style="text-align: center;">167</p>	<p><b>2000, the number of visits that's reported on this</b></p> <p><b>part of the exhibit is 818,522?</b></p> <p>A Yes.</p> <p><b>Q Which corresponds with the first page of the</b></p> <p><b>exhibit; correct?</b> 02:59</p> <p>A Yes, it does.</p> <p><b>Q So can we correctly assume that Lake Tenkiller</b></p> <p><b>is Lake No. 23?</b></p> <p>A I think we can.</p> <p><b>Q Okay. So if you go back to the first page of</b> 02:59</p> <p><b>this exhibit, can you tell me what the number of</b></p> <p><b>visits were for Lake Tenkiller in 2007 as reported</b></p> <p><b>by the Corps?</b></p> <p>A Yes, and the number that's in the second</p> <p>spreadsheet is wrong. It dropped a -- it dropped a 02:59</p> <p>digit.</p> <p><b>Q So the number of visits?</b></p> <p>A Was higher than what's in the second</p> <p>spreadsheet.</p> <p><b>Q So as reported by the Corps --</b> 02:59</p> <p>A It's 2924047.</p> <p><b>Q And as entered in the second part of the</b></p> <p><b>exhibit?</b></p> <p>A It's 294047, so there is a significant digit</p> <p>missing. 03:00</p> <p style="text-align: center;">169</p>

1 **Q Do you know how an error like that could**  
2 **happen?**  
3 A I don't know, particularly since these were  
4 copied over from one place to the other.  
5 **Q Now, you ran the recreation with the number of** 03:00  
6 **visits for Lake Tenkiller in 2002 set to 294,047;**  
7 **isn't that right?**  
8 A That would be my guess if that -- if that  
9 mistake was not corrected before the model was run.  
10 So it would have underestimated visitation for that 03:00  
11 last year.  
12 **Q Now, before we just went over this exhibit,**  
13 **were you aware of this error?**  
14 A No, I was not, and I -- you know, I'm not sure  
15 whether it was caught in terms of when the analysis 03:01  
16 was done or not, but if it was not, then it's  
17 underestimated visitation for that last year on  
18 Tenkiller.  
19 **Q Okay. Do you know how this error impacted the**  
20 **significance of the mean clarity variable?** 03:01  
21 A No, I don't.  
22 **Q And what do you think would happen to the**  
23 **parameter on mean clarity if you reran the**  
24 **regression with the 294,047 replaced by the correct**  
25 **number, which is almost 10 times larger?** 03:01  
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1 A I don't know. I mean, we'd have to -- there  
2 are a lot of sites here in which there are mean  
3 clarity readings for that year, there's 20 sites, so  
4 I'd have to run it to see what difference it would  
5 make. I can't speculate. 03:02  
6 **Q But as you sit here today, you don't know --**  
7 A I don't know.  
8 **Q -- what difference it would make?**  
9 A No, I don't.  
10 **Q Dr. Desvousges, I'm handing you what's been** 03:02  
11 **marked as Exhibit 6.**  
12 A Should I clip 5 back together?  
13 **Q Yes, please. And I can represent that Exhibit**  
14 **6 was produced in your considered materials.**  
15 A Okay. 03:04  
16 **Q And the electronic file name was**  
17 **DesvousgesRausser002861-OKvisitation.DTA.**  
18 A Okay.  
19 **Q Do you recognize this document?**  
20 A I've not looked at this one before, but I'm 03:04  
21 looking at it now. Okay.  
22 **Q Do you know what role this document served in**  
23 **your regression model?**  
24 A It's the data file that the regression was run  
25 on. 03:05  
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**Q And do you know who prepared this file?**  
A Holly Michael.  
**Q And do you know how the data was entered into**  
**this data file?**  
A My assumption is that it was brought in from 03:05  
this combination of these spreadsheets here.  
**Q Do you know whether any kind of checking would**  
**have occurred prior to its use in the regression**  
**model to confirm its accuracy?**  
A The -- it was checked, but the mistake is 03:05  
still in here in terms of Tenkiller Lake for the  
last year.  
**Q And who would have checked it?**  
A Holly would have checked it, and I don't know  
whether she asked someone else to double-check it or 03:05  
not.  
**Q Now, what role did the lake depth variable**  
**play in your model?**  
A It was one of the independent variables that  
we included in the model. 03:06  
**Q Am I correct then that the lake depth data**  
**that appears here should correspond with the lake**  
**depth data produced by the Army Corps of Engineers?**  
A I'm not sure what was done with the lake depth  
data here as to what transformation was done, as to 03:07  
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what's being used here relative to the -- this  
appears to be different -- it appears to be  
different data.  
**Q Do you know where the lake depth data came**  
**from?** 03:07  
A I'm assuming it still came from the Corps of  
Engineers, but --  
**Q Do you know that to be true?**  
A I don't know that to be true. I'd have to  
verify that. 03:07  
**Q Let me hand you Exhibit 7, which is a printout**  
**from the U.S. Army Corps of Engineers' Web site**  
**relating to Lake Tenkiller.**  
A Uh-huh.  
**Q And if you go down in Exhibit No. 6 --** 03:08  
A Uh-huh.  
**Q -- to Lake 23.**  
A Okay.  
**Q Which we agreed before was Lake Tenkiller?**  
A That's correct. 03:08  
**Q And you look over at the column for lake depth**  
**relating to Lake No. 23, that number is 632;**  
**correct?**  
A That's correct, that's what it appears.  
**Q And then looking at Exhibit 7, if you look in** 03:08  
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1	the left-hand column, the second set of information		A No. Excuse me. I just got water on the
2	there, it says, normal elevation at the top of the		exhibit. I'm sorry. I included a distance variable
3	conservation pool 632 feet; do you see that?		from the Tulsa metropolitan or the nearest
4	A I do see that.		metropolitan area, which in most of these instances
5	<b>Q Do you assume that that's the number that is</b>	03:09	was Tulsa, and I didn't transform that into -- I
6	<b>captured in the lake depth column on Exhibit 6?</b>		used distances as an indicator of -- at least as a
7	A That's -- that would be my understanding.		scaler for how far people would have to travel, and
8	<b>Q Then let me hand you what's been marked as</b>		you could certainly multiply that times a travel
9	<b>Exhibit 8.</b>		cost estimate to make it into a price, but I was
10	A Okay.	03:09	interested in getting something in there that
11	<b>Q Which is the same kind of printout from the</b>		indicated the fact that some of these were different
12	<b>U.S. Army Corps of Engineers, but which relates to</b>		distances from where people lived.
13	<b>Fort Supply Lake.</b>		<b>Q Dr. Desvousges, when you have data over</b>
14	A Okay. Do -- do you know what number Fort		<b>multiple lakes and multiple years, is there a name</b>
15	Supply Lake is?	03:10	<b>for that type of data?</b>
16	<b>Q Well, looking at Exhibit 5.</b>		03:13
17	A Okay, 1, 2, 3, 4, 5, 6, 7, 8, 9.		A Multiple lakes and multiple -- cross-section
18	<b>Q Correct.</b>		time series or panel data, it's called different
19	A Do we think it's 9?		things.
20	<b>Q So if we agree that Fort Supply Lake is Lake</b>	03:10	<b>Q When you have panel data, does the literature</b>
21	<b>No. 9.</b>		<b>recommend certain types of models to estimate?</b>
22	A Uh-huh.		03:14
23	<b>Q And we go over to the lake depth variable on</b>		A It really depends on the purpose of what
24	<b>Exhibit 6, the lake depth for Lake No. 9 is</b>		you're trying to do.
25	<b>indicated as zero; correct?</b>	03:10	<b>Q What kinds of models does the literature</b>
	174		<b>recommend?</b>
			A It really depends on -- it depends on what
			176
1	A That's correct.		your purpose is.
2	<b>Q And according to Exhibit No. 8, which is the</b>		<b>Q Which metropolitan center was used to</b>
3	<b>document from the Corps, the lake depth is indicated</b>		<b>calculate distance for which lake?</b>
4	<b>as 2,004 feet; correct?</b>		A I know Tulsa was the main one. I'd have to --
5	A Yes, at the normal conservation for -- for May	03:10	I'd have to double-check to see if some of the other
6	of '09.		03:14
7	<b>Q Do you have any understanding as to why</b>		lakes -- it was the nearest one, and Tulsa, for a
8	<b>Exhibit 6 would reflect a lake depth of zero for</b>		lot of those lakes, is still the nearest one, but
9	<b>Fort Supply Lake?</b>		I'd have to double-check that to see whether Tulsa
10	A No, I don't.	03:11	was the nearest one for all of them. I think for a
11	<b>Q Do you know whether you would get a</b>		couple of them, Dallas may have actually been closer
12	<b>significant coefficient on water clarity if that</b>		03:15
13	<b>were corrected?</b>		than Tulsa.
14	A No, I don't.		<b>Q And is that indicated in the data?</b>
15	<b>Q So prior to our going through Exhibit 6, were</b>	03:11	A In terms of the distances indicated.
16	<b>you aware of the error?</b>		<b>Q Okay. Although the distance may be there,</b>
17	A Well, at this point, I would want to make sure		<b>does the data reflect which metropolitan area for</b>
18	that this is particularly in error. I -- the other		<b>which lake?</b>
19	one clearly is in error. This I'm not sure about.		03:15
20	I'd have to double-check this one.	03:11	A I don't know that it does.
21	<b>Q But as you sit here right now, you're not</b>		<b>Q Did you estimate a fixed effects model here?</b>
22	<b>sure?</b>		A I'm not exactly sure how we would class --
23	A I'm not sure.		this is just a simple regression model is all we
24	<b>Q Did you include a price variable in your</b>		03:16
25	<b>model?</b>	03:12	were trying to do, was to relate the log of visits
	175		to various variables, and we looked at -- we looked
			at whether there was effects -- any effects
			associated with years by looking at different year
			variables in there, and that was -- that was the
			03:16
			177

1 nature of the regression that we ran.  
2 **Q And why did you only do a simple model here?**  
3 A I was basically trying to look at some simple  
4 relationships to try to explain a little bit better  
5 what the information was in the aggregate visitation 03:17  
6 figure that was included in the report.  
7 **Q Did you estimate a random effects model?**  
8 A No, I did not.  
9 **Q Why not?**  
10 A I didn't think it was necessary. 03:17  
11 **Q In your report you stated that on the main**  
12 **body of the lake, visitors can experience the best**  
13 **water clarity in the state. What, in your view, is**  
14 **the main body of the lake?**  
15 A Is this in terms of -- I'm going to take a 03:18  
16 look at that, if you don't mind. Could you tell me  
17 what page that's on?  
18 **Q Let's go off the record for a moment and I'll**  
19 **try to find it.**  
20 A All right, thank you. 03:18  
21 VIDEOGRAPHER: We are off the record. The  
22 time is 5:13 p.m.  
23 **Q You might want to modify that. It's 3:13.**  
24 VIDEOGRAPHER: Oh, 3 -- I'm sorry, I was  
25 on military time. 03:18

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1 (Following a short recess at 3:18 p.m.,  
2 proceedings continued on the record at 3:35 p.m.)  
3 VIDEOGRAPHER: We're back on the record.  
4 The time is 3:31 p.m.  
5 **Q (By Ms. Moll) Dr. Desvousges, if I could 03:35**  
6 **direct your attention to Page 16 of your expert**  
7 **report.**  
8 A Okay.  
9 **Q Do you have that in front of you?**  
10 A Yes, I do. 03:35  
11 **Q If you look on the top of Page 16 -- let's**  
12 **start actually at the bottom of Page 15.**  
13 A Bottom of Page 15?  
14 **Q Yeah. If you could just familiarize yourself**  
15 **for a moment with the subject matter of Pages 15 and 03:36**  
16 **16.**  
17 A Of the entire pages or just parts of those  
18 pages or --  
19 **Q Just starting under Figure 2.1 and going**  
20 **through the first three lines of Page 16. 03:36**  
21 A Thank you for clarifying. Okay. I've looked  
22 at those.  
23 **Q Okay. So on the bottom of Page 15, you make**  
24 **the statement here, similar statements can be found**  
25 **in the 2009 Lake Tenkiller visitor's guide, then you 03:37**

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**quote, on the main body of the lake, visitors can**  
**experience the best water clarity in the state.**  
**Each year, countless scuba enthusiasts travel to**  
**Tenkiller to dive in its deep clear waters; do you**  
**see that? 03:37**  
A Yes, I do see that.  
**Q Okay. Can you tell me what the main body of**  
**the lake is?**  
A I'm not exactly sure what the visitor's guide  
is referring to as the main body of the lake. It -- 03:37  
my guess is that they're making some statement about  
the -- could be the lake nearest the dam, it could  
be, you know -- I'm not exactly sure what they're  
referring to.  
**Q Do you know where water quality is measured in 03:37**  
**Lake Tenkiller?**  
A It's measured at a lot of different locations  
in Lake Tenkiller.  
**Q Do you know where?**  
A Throughout the lake. There's like seven or 03:38  
eight stations that the Water Resources Board  
provided data on, and three of those stations were  
up at one end of the lake, several -- the rest of  
them were just kind of spread throughout the rest of  
the lake. 03:38

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**Q And what do you base your understanding on?**  
A I'm sorry?  
**Q What do you base your understanding on?**  
A Looking at the -- looking at a figure of the  
-- where the sampling stations were. 03:38  
**Q And where did that data come from?**  
A It came from the Oklahoma Water Resources  
Board.  
**Q Do you know when water quality is measured?**  
A I know when the data were measured that we're 03:38  
using in our model in terms of what the measurements  
are that we're using. Is -- or do you --  
**Q What is the time measurement that your data is**  
**using as to when water quality was measured there?**  
A Sure. We took an average monthly reading for 03:39  
the -- for the mean clarity, we took an average  
monthly reading for each one of the summer months  
when recreation is at its greatest.  
**Q And do you know how water quality is measured**  
**on the lake? 03:39**  
A Secchi disks is my understanding.  
**Q Okay. What specifically is a Secchi disc**  
**reading and measuring?**  
A It's measuring clarity, is my understanding.  
That they put a disk into the water that -- and they 03:39

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1 then are able to -- they then measure how far down  
2 they can go, I think, and still be able to see the  
3 disk, or something along those lines. So it's a way  
4 of trying to get at clarity.

5 **Q So it's your understanding that Secchi disk 03:40**  
6 **readings were taken at different parts of the lake?**

7 A It was taken at -- I'm pretty sure that we had  
8 readings at all the different stations, so let's  
9 just talk about Tenkiller. We had readings for all  
10 of those. We used then the average reading for 03:40  
11 those stations, and then we used the average for  
12 across the summer months.

13 **Q Are Secchi disk readings at any given lake**  
14 **taken at different points in time?**

15 A I'm not sure. 03:40

16 **Q So you don't know whether certain protocol was**  
17 **followed in terms of time of day?**

18 A Oh, in terms of time of day? I'm not sure  
19 what -- these were the stations that the Oklahoma  
20 Water Resources Board, their monitoring stations, we 03:41  
21 simply used there. I don't recall the times in  
22 which those readings were taken at the different  
23 stations.

24 **Q Now, for the lakes that you included in your**  
25 **regression analysis, do you know what are the parts 03:41**

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1 **of the lake where Secchi disk readings are taken?**

2 A You know, I don't recall specifically. You  
3 know, it was wherever the monitoring stations were  
4 that it -- the Water Resources Board had monitoring  
5 stations and where they did those readings, so we 03:41  
6 used whatever stations that they had where they did  
7 those readings.

8 **Q And did you make any attempt to find out where**  
9 **those locations were?**

10 A Well, for Tenkiller, specifically, I looked at 03:41  
11 geographically where they were dispersed throughout  
12 the lake.

13 **Q What about the remaining lakes in the**  
14 **regression?**

15 A I'm trying to remember. I looked at Eufaula, 03:42  
16 and I don't know that I looked at the others. I  
17 looked at those two in particular.

18 **Q How meaningful for recreation visitation is an**  
19 **average of Secchi readings over different times of**  
20 **day and night? 03:42**

21 A Well, an average is an indicator of what you  
22 would find on average at this lake over the course  
23 of the summer. That's basically -- because we're --  
24 we're dealing with an aggregate visitation here. We  
25 don't have visitation by specific times of the day 03:42

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or specific individuals, so what we're trying to do  
then is to essentially try to come up with something  
that's going to at least capture, on average, what  
would people -- what would people experience in  
terms of clarity based on these readings, and then 03:43  
we also used the minimum and the maximum as well,  
clarity levels, as alternative specifications.

**Q How meaningful for recreation visitation is an**  
**average of Secchi readings over different parts of**  
**the lake? 03:43**

A Well, I think it basically gives you what's  
going on on average throughout the lake. And so to  
the extent that recreation is taking place, you  
know, throughout the lake of different activities  
and the like, then it will -- then it will represent 03:43  
on average what people would see.

**Q And what if it includes parts of the lake that**  
**most visitors do not go to?**

A Well, if it includes parts of the lake that  
they don't go to, then those -- those would not be 03:44  
particularly relevant for -- you know, for users.

**Q Do you know in your regression whether Secchi**  
**readings were taken from the various lakes in areas**  
**where visitors do not go?**

A I don't know exactly what the protocol is that 03:44  
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the Water Resources Board uses. My assumption is is  
that they're -- they're probably going to be taking  
them more likely at places where people are -- are  
there or at places that they're concerned about  
water clarity. I mean, you can imagine different 03:44  
rationales that people would have for locating  
monitoring stations. I don't know exactly what  
theirs were, but certainly one of those rationales  
could be that this is where people are, and so you  
want to capture that. It could be also that they 03:45  
may place those monitors in places where the water  
quality is the worst, and so they're trying to  
capture -- to get more readings there than maybe in  
other parts of the lake where it's better. So I  
don't know what strategy they used, but you can 03:45  
imagine there could be different reasons that they  
would use for locating monitors.

**Q But as you sit here today, you don't know?**

A I don't know what the strategy was. All I did  
was to look at where they were located throughout 03:45  
the -- throughout the lake.

**Q How did you use the 8:00 a.m. and 12:00**  
**midnight readings in the Corps of Engineer data on**  
**lake depth to calculate your lake level variables?**

A I don't recall the specifics of the lake depth 03:45

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1 Those really came from the work that Dr. Rausser and  
 2 his staff did.  
 3 **Q Now, you mentioned that you received the**  
 4 **visitor's guide for Lake Eufaula. Do you remember**  
 5 **reviewing it?** 03:52  
 6 A Briefly, yes, I did look at it.  
 7 **Q And what information do you recall from that**  
 8 **visitor's guide as impacting your decision to use**  
 9 **Lake Eufaula in the hedonic model?**  
 10 A I think certainly the main things were a 03:53  
 11 confirmation of the types of activities that were  
 12 there that we knew from the Corps data, but some  
 13 discussion was found and actually some photographs  
 14 and things like that of different portions of  
 15 Eufaula. 03:53  
 16 **Q Do you recall whether that guide reported**  
 17 **there being a casino near Lake Eufaula?**  
 18 A I -- there are -- I don't specifically  
 19 remember a casino there. I do know that there are a  
 20 number of casinos that are spread throughout the 03:53  
 21 area there. There may very well have been some  
 22 mention of a casino.  
 23 **Q Do you know whether there's a casino near Lake**  
 24 **Eufaula?**  
 25 A I believe that there is. 03:54

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1 **Q But you did not make the casino or a distance**  
 2 **from the casino a variable in your hedonic model;**  
 3 **correct?**  
 4 A No, we did not.  
 5 **Q Isn't that a factor that should be controlled** 03:54  
 6 **for in a hedonic model?**  
 7 A I'm not sure. Possibly, possibly not, I'm  
 8 just not sure.  
 9 **Q Isn't it true that the presence of a casino**  
 10 **near a lake would impact a home buyer's decision to** 03:54  
 11 **buy in that area?**  
 12 A I don't know. I mean, it could be positive,  
 13 it could be negative.  
 14 **Q Wouldn't you want a control for that?**  
 15 A I'm not sure. I suspect it's an empirical 03:54  
 16 question.  
 17 **Q Did you perform any economic analysis**  
 18 **regarding damages prior to January of '09?**  
 19 A No, I did not.  
 20 **Q Have you ever worked on a hedonic model in the** 03:55  
 21 **context of litigation before?**  
 22 A Yes.  
 23 **Q Can you identify those for me, please?**  
 24 A Back to the resume?  
 25 **Q Yes, please.** 03:55

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A Thank you, Colin, he has it up on top for us.  
 Oh, it's Exhibit 1. Good man. Okay. Okay. I  
 guess I need for you to clarify for me how broadly  
 you want to use the term hedonic.  
**Q Well, how do you define the term hedonic?** 03:56  
 A Well, I think you used that on me this  
 morning. Let me just be clear. There are -- there  
 are some studies that are true hedonic studies.  
 There are other studies that are variations on  
 hedonic studies, and then there's yet a third group 03:56  
 that are based on hedonic principles that use repeat  
 sales, so they're similar in a lot of ways to  
 hedonics, but you don't use the same characteristics  
 because you've got the repeats that are going on  
 there. So I -- 03:57  
**Q I don't want to talk over you.**  
 A That's fine.  
**Q With that breakdown in mind, if you could go**  
**through and identify for me those pieces of**  
**litigation in which you have worked on a model that** 03:57  
**falls under any of the three categories that you**  
**described.**  
 A Okay, thank you. All right. I'm sorry, I  
 need to ask you another clarifying question. Do you  
 also -- do you only include ones that I myself 03:58

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developed versus a hedonic model that was done by  
 the other side?  
**Q Just one that was developed by you.**  
 A Okay. Thank you. The -- if we look at the  
 project in Colorado Springs, it's one, two, three, 03:58  
 fourth one down, that was one where we had a hedonic  
 analysis that was done for both a reference or  
 benchmark area and a subject area. This was a  
 groundwater case, and there was a plume area  
 identified by the plaintiffs, some properties over 03:58  
 the plume, some properties in another area that were  
 not over the plume that served as the reference  
 area.  
 We talked earlier today about the Super --  
 the South Valley Superfund site that used a hedonic 03:59  
 model. The Dataw Island case that we talked about  
 this morning also uses a form of a hedonic model.  
 It's really a -- it's a quasi-random experiment  
 form, but it involves basic hedonic principles.  
 I did a case in California on -- in the 04:00  
 San Martin area. It's not listed under -- under  
 projects, but it is listed in terms of expert  
 reports, so we'll have to go to a different part of  
 the resume to find that one, if that's okay with  
 you. 04:00

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1	<b>Q Uh-huh.</b>			A Okay. Repeat sales was done in the Palmisano	
2	A We can go past all the ASARCO cases and --			and Daniels case --	
3	okay. This would be the -- it's -- I'm sorry to say			<b>Q Okay.</b>	
4	what page I'm on. I'm on expert reports, the one			A -- in San Martin --	
5	where the last ASARCO one kind of appears. I think	04:01		<b>Q Okay.</b>	04:04
6	you're on the same page, where the last ASARCO one			A -- versus Olin.	
7	appears at the top. If you go down to, one, two,			<b>Q Okay.</b>	
8	three, four, five up from the bottom, The Palmisano,			A I'm sorry.	
9	et al versus Olin; do you see that? Are we on the			<b>Q Before we took a break, we went through some</b>	
10	same page? 04:01			<b>of the documents relating to the recreation</b>	04:04
11	<b>Q I don't believe we are, no.</b>			<b>regression that you did?</b>	
12	A And I'm sorry.			A Yes, we did.	
13	<b>Q Okay. I'm with you now.</b>			<b>Q And in those documents, there appeared to be</b>	
14	A Are you with me now? There was both a			<b>some errors; correct?</b>	
15	supplemental report in that case and then there was	04:01		A One for sure, and one that I'm not sure about.	04:04
16	a full report in that case. The Daniels, et al			<b>Q During the break, did you contact anyone to</b>	
17	versus Olin, there -- there were two different			<b>inquire about those errors?</b>	
18	plaintiffs' firms that were represent -- excuse me,			A No, I did not.	
19	representing different groups of plaintiffs for the			<b>Q Okay. If you'd turn with me in your report to</b>	
20	same incident, and this involved a groundwater	04:01		<b>Page 76, please. Do you have that in front of you?</b>	04:05
21	contamination in the San Martin area, which is			A Yes, I do.	
22	south -- south of San Jose, and this is one where we			<b>Q Okay. And I would like to direct your</b>	
23	had repeat sales data in both the subject area, as			<b>attention first to Table 4.9.</b>	
24	defined by the plaintiffs, and then we had three			A Uh-huh.	
25	reference or benchmark areas that were not on the	04:02		<b>Q Can you tell me who prepared Table 4.9?</b>	04:05
	194			196	
1	same -- not on the same water supply that were			A The -- probably myself and Kristi Mathews.	
2	located nearby. I think those are the cases that --			<b>Q Probably or do you know?</b>	
3	where I actually did an analysis at my own model or			A Kristi did the first version of the table, and	
4	data, data analysis.			then I went back through and then had her modify it	
5	<b>Q Now, were any of the cases that you've just</b>	04:02		to put everything in the same nearest dollars.	04:06
6	<b>identified -- withdrawn. My question is, in each of</b>			<b>Q Can you explain that last answer to me?</b>	
7	<b>the cases that you've just identified, who were the</b>			A Sure.	
8	<b>parties on whose behalf you were doing the hedonic</b>			<b>Q In terms of which figures you're specifically</b>	
9	<b>model, the plaintiffs or the defendants?</b>			<b>referring to.</b>	
10	A Okay. For each one of those? 04:03			A Well, yeah, the mean values now are all	04:06
11	<b>Q Yes, please.</b>			expressed in -- if you look at the footnote to the	
12	A I can simplify that.			table, it says, mean values are expressed in 2008	
13	<b>Q Okay.</b>			dollars for all four studies. So the original	
14	A Okay. The plaintiffs' case -- the only one			version of the table, I seem to recall, had the	
15	that's a plaintiff's case is the Datav Island case,	04:03		dollars for the years in which the studies were	04:06
16	the others are defendants.			conducted, and so I-standardized that to where it	
17	<b>Q Now, earlier you were telling me there were</b>			was the same across all four years.	
18	<b>three kind of categories of hedonic models.</b>			<b>Q But the figures reflected relating to bid</b>	
19	A Uh-huh.			<b>range are not in 2008 --</b>	
20	<b>Q Can you identify for me in each case which</b>	04:03		A That's correct, just the mean values.	04:07
21	<b>category you would put --</b>			<b>Q And who did the calculation on the mean values</b>	
22	A I tried to do it as I went through it.			<b>to arrive at what is reported in the footnote as</b>	
23	<b>Q Okay.</b>			<b>2008 dollars?</b>	
24	A But I --			A Kristi Mathews took the means from each one of	
25	<b>Q Forgive me, I didn't hear repeat sales.</b>	04:03		the sources that are indicated here and then put	04:07
	195			197	

1 those into 2008 dollars, so that as you can see, the  
 2 numbers are taken from different studies, is what  
 3 the note indicates, and so what we then did was to  
 4 take those means and turn them all into 2008  
 5 dollars. 04:07  
 6 **Q** Would you read for me the paragraph above the  
 7 table that begins Table 4.9 comparison?  
 8 **A** Sure. Start there?  
 9 **Q** Yes, please.  
 10 **A** Table 4.9 compares the mean WTP values from 04:07  
 11 the studies. For the Stratus CV study, both the  
 12 mean for the scope and base version are included.  
 13 What should drive the differences in per household  
 14 willingness to pay values is the relative size of  
 15 the injury described, thus intuition suggests that 04:08  
 16 the willingness to pay value from the Exxon Valdez  
 17 oil spill study, which arguably describes the most  
 18 extensive injury of those in the table, should have  
 19 the highest WTP value. However, the Exxon Valdez  
 20 study has the lowest WTP value because it included 04:08  
 21 the lowest bid structure. The top bid included in  
 22 the Exxon Valdez study was \$120.  
 23 **Q** Now, in that paragraph, you state that  
 24 intuition suggests that the WT value -- WTP value  
 25 from the Exxon Valdez oil spill study arguably 04:08  
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1 describes the most expensive injury of those in the  
 2 table.  
 3 **A** Yes.  
 4 **Q** Can you describe for me the basis of your  
 5 statement there? 04:09  
 6 **A** Well, if you look back over on the previous  
 7 page, Page 75, we're talking about an injury that  
 8 within the studies was considered to be a thousand  
 9 miles of shoreline that was oiled, a few years to  
 10 recover, 22,600 birds found dead, estimated total 04:09  
 11 bird deaths of 75 to 150,000, three to five years to  
 12 recover, 580 otters and a hundred seals killed with  
 13 a couple of years to recover.  
 14 **Q** And when was the Exxon Valdez oil spill?  
 15 **A** 1989. 04:09  
 16 **Q** And how about the southern California blight  
 17 incident?  
 18 **A** As to when that was?  
 19 **Q** Yes.  
 20 **A** Okay. Well, the report was in 1994, so I'm 04:10  
 21 presuming that it was around in that time frame.  
 22 **Q** And how about the California oil spill?  
 23 **A** '96 in terms of the report. I think the work  
 24 actually went on for -- for a while before that.  
 25 **Q** So going back to Table 4.9 for a moment. 04:10  
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**A** Uh-huh.  
**Q** The bid range numbers are the actual bids used  
 in the corresponding study?  
**A** Yes, that's correct.  
**Q** Okay. So am I correct that the, for example, 04:10  
 10 to \$120 range for Exxon Valdez, that would be in,  
 say, 1990 dollars or whatever that study was?  
**A** Yeah, yeah, that's correct.  
**Q** Okay. Other than those factors that are  
 listed in Table 4.8, do you rely on anything else 04:11  
 for your statement there that the Exxon Valdez oil  
 spill study describes the most extensive injury of  
 those in the table?  
**A** And the discussion that I went through, right,  
 in terms of Table 4. -- 04:11  
**Q** Right.  
**A** Table 4.8, thank you, yes. I mean, that's  
 certainly the main source of information, not to  
 mention having worked on the Exxon Valdez.  
**Q** Do you know for each of these studies that you 04:11  
 report in Table 4.9 what the total value of the  
 willingness to pay was?  
**A** Multiplied by the households' number?  
**Q** Correct.  
**A** No, I don't know. 04:12  
 200

**Q** Okay. Are you aware of any literature saying  
 it is appropriate to use the bid design in one study  
 describing one injury to another study describing  
 another injury?  
**A** Well, there's not -- I don't know that there 04:12  
 is a lot of literature that's -- that's dealt with  
 that issue. Basically, I was trying to get some  
 intuition by looking across studies, and it's  
 something that -- that economists do all the time in  
 terms of when we do a meta-analysis, we will take 04:13  
 results that go from -- from multiple studies and  
 one of the things that you can do if you do a  
 meta-analysis is that you look at what the inputs  
 were of the study, the characteristics of the study,  
 and you can look at what the outcome of the study 04:13  
 is. I didn't do a meta-analysis here. All I did  
 was a fairly simple comparison kind of looking at  
 the intuition of what you see when you compare  
 across some of these studies.  
**Q** Is there any meta-analysis of CV bids in the 04:13  
 literature?  
**A** No, there's not, but I think -- I don't think  
 it would be a bad idea. I think it's something  
 that -- that merits more consideration.  
**Q** Do you consider yourself to be an expert on 04:13  
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<p>1 <b>optimal bid design?</b></p> <p>2 A There's -- I would say that there are -- there</p> <p>3 are a couple of different aspects of bid design.</p> <p>4 There is the pure statistical side of trying to</p> <p>5 develop a bid structure, and then there is the -- 04:14</p> <p>6 the in-practice of trying to develop bids that you</p> <p>7 think are going to -- to capture a distribution, and</p> <p>8 I -- I would probably fall in the category of the</p> <p>9 people that have done things in practice. I've not</p> <p>10 run any kind of statistical models to try to design 04:14</p> <p>11 bids. I have done worked with colleagues who have</p> <p>12 done that sometimes as part of work that we've done,</p> <p>13 but not myself personally.</p> <p>14 <b>Q Who has written in the economic literature on</b></p> <p>15 <b>the in-practice side of optimal bid design? 04:15</b></p> <p>16 A The in-practice side. Well, no one really</p> <p>17 writes very much about the in-practice side. It's</p> <p>18 what -- what you learn in the course of doing</p> <p>19 studies, observing other studies that other people</p> <p>20 have done, and working on various CV studies, as 04:15</p> <p>21 well as reviewing a lot of CV studies over a long</p> <p>22 period of time. So there's not -- the literature</p> <p>23 really is gained from looking at the studies, not</p> <p>24 from a specific article or something like that.</p> <p>25 <b>Q How have you approached the design in your own 04:15</b> 202</p>	<p>those open-ended studies have used payment cards,</p> <p>and the payment cards have an array of amounts that</p> <p>are put on them. And so one of the issues that</p> <p>arise, if you're using a payment card with an</p> <p>open-ended design, is is what values do you put on 04:17</p> <p>those payment cards. So it's not divorced from it,</p> <p>but it's certainly not the same as -- it's not</p> <p>exactly the same as in a dichotomist choice study.</p> <p><b>Q Going back to Table 4.9, the Exxon Valdez</b></p> <p><b>study, that was a national study; correct? 04:17</b></p> <p>A Yes, it was.</p> <p><b>Q And the remaining three were regional studies?</b></p> <p>A Regional in the sense that the Montrose study</p> <p>was California specific, if I remember correctly, in</p> <p>terms of the -- the sample design for that. The 04:18</p> <p>California oil spill study, I think was regional</p> <p>within California. I don't remember that one as</p> <p>well. And does that cover the -- and obviously the</p> <p>Stratus study is focused on portions -- most of</p> <p>Oklahoma. 04:18</p> <p><b>Q Okay. Earlier you testified that the bid</b></p> <p><b>design depends on the type of study that you're</b></p> <p><b>doing; correct?</b></p> <p>A Yes, it does.</p> <p><b>Q Are there any basic principles behind choosing 04:18</b> 204</p>
<p>1 <b>studies?</b></p> <p>2 A It depends on the study.</p> <p>3 <b>Q Describe for me the approach that you</b></p> <p>4 <b>generally take.</b></p> <p>5 A I -- I don't think I can -- it really does 04:15</p> <p>6 depend on the study, frankly, in terms of what we've</p> <p>7 done.</p> <p>8 <b>Q What is the highest bid you have ever used in</b></p> <p>9 <b>a study?</b></p> <p>10 A Oh, goodness. I don't recall. 04:16</p> <p>11 <b>Q Do you have any idea as to a ballpark figure?</b></p> <p>12 A No, I really don't. I haven't gone back --</p> <p>13 back and looked at that because at some time, it's</p> <p>14 really going to depend upon the particular type of</p> <p>15 study that you're doing. So just from the 04:16</p> <p>16 standpoint of whether it's a conjoint study, whether</p> <p>17 it's a CV study, whether it's on open-ended CD study</p> <p>18 or whether it's dichotomist choice CV study, whether</p> <p>19 it's contingent ranking, all of those things are</p> <p>20 something that you just look at in terms of the bid 04:16</p> <p>21 structure.</p> <p>22 <b>Q There is no bid design in open-ended CV</b></p> <p>23 <b>studies, is there?</b></p> <p>24 A No, there's not, that's what I mean. You</p> <p>25 know, in terms of -- but some of those -- some of 04:17 203</p>	<p><b>a bid design that you would apply to any study?</b></p> <p>A I think the basic principles -- I think there</p> <p>are some basic principles in terms of being able to</p> <p>try to, in some ways, capture the distribution of</p> <p>responses. And, you know, if you're doing a 04:19</p> <p>conjoint study, there's some very specific issues</p> <p>that arise with conjoint in terms of maintaining</p> <p>independence between the different attributes that</p> <p>you have in your design. There's an --</p> <p>orthogonality is a concept that's used in those 04:20</p> <p>designs so that -- that's important in those studies</p> <p>because you don't want to have attributes that are</p> <p>inadvertently correlated with each other because</p> <p>then you can't really distinguish between the type</p> <p>of correlation, whether the correlation is actually 04:20</p> <p>observed or whether it was just induced by the -- by</p> <p>the unintentional correlation in the design.</p> <p><b>Q Do you have any opinion as to what bid design</b></p> <p><b>should have been used in the Stratus study?</b></p> <p>A You know, I haven't really thought about what 04:20</p> <p>alternative bid design that -- that they might have</p> <p>used, so no, I don't have a specific opinion on</p> <p>that.</p> <p><b>Q Okay. We'll shift gears to Chapter 6 now.</b></p> <p>A All right. 04:21 205</p>



<p>1 <b>Q</b> In Chapter 6 of your report, you raise the 2 issue of aggregation of damages, as you call it; 3 correct? 4 A I believe that's correct. Let me — 5 <b>Q</b> Okay. 04:22 6 A — let me get to Chapter 6, if that's okay, 7 and can I pull out my handy dandy reference guide 8 to — 9 MR. DEIHL: I screwed it up. 10 A Yeah, you did, Colin. I'm sorry. I was just 04:22 11 trying to find the thing that was put together that 12 had all the — here it is. Okay. I just want to 13 have that out there. 14 <b>Q</b> You're referring to Rausser Exhibit — 15 A Yes. 04:22 16 <b>Q</b> — No. 3? 17 A No. 3. Thank you. Yes, it is. Thank you. 18 So yes, 6 is aggregation of damages. 19 <b>Q</b> Now, am I correct that your basic conclusion 20 here is that the damages estimate should not capture 04:22 21 any Oklahoman who does not know about the IRW and 22 Lake Tenkiller? 23 A I'm sorry, I just need to get to that section 24 before I try to answer your question, if that's 25 okay. Okay. I'm going to have to ask you to repeat 04:23 206</p>	<p>A Uh-huh. <b>Q</b> -- and an Oklahoman who knows about the IRW and Lake Tenkiller, but may not know about the injury? A Uh-huh. Okay. Certainly the first category 04:25 that you mentioned, the Oklahoman who -- who has no awareness or knowledge of the resources would be in the category of people who I feel would not hold a nonuse value. In terms of knowledge of the injury, I guess it seems to me like that there's -- we've 04:25 got a spectrum here, okay, that they -- do they have knowledge of the injury that exists independently of having been given a CV questionnaire, and if -- if to me, the only source of the information that people have about the injuries comes from that CV 04:26 questionnaire, I find it -- I find it difficult to believe that that value is very well established. <b>Q</b> Would a U.S. citizen who did not know about Prince William Sound before March of 1989 not have a nonuse value for the Exxon Valdez spill? 04:26 A Well, that's a -- that's a different question in the sense of whether or not the incident itself created the nonuse value versus whether or not being told about that comes from the CV questionnaire. I think that with the Exxon Valdez, it's really 04:27 208</p>
<p>1 your question, if you don't mind. 2 <b>Q</b> I don't mind. 3 A I'm sorry. 4 <b>Q</b> My question was, am I correct that your basic 5 conclusion in Chapter 6 is that the damages estimate 04:23 6 should not capture any Oklahoman who does not know 7 about the IRW and Lake Tenkiller? 8 A I -- there's a number of points that are made 9 in this chapter, but I -- I do talk a lot about the 10 issue of knowledge and what -- whether or not people 04:24 11 have to have some knowledge and awareness of a 12 resource in order to experience a loss, and the 13 opinion that's expressed in here is that they do. 14 So I think that's an inference that one can draw 15 from -- from this chapter. 04:24 16 <b>Q</b> I'm trying to better understand your 17 statements in this chapter. 18 A Sure. 19 <b>Q</b> So throughout the chapter, you talk about 20 knowledge of the resource, and other places 04:24 21 knowledge of an injury, and so I'm trying to 22 understand whether you are distinguishing, for 23 purposes of your conclusion here, between an 24 Oklahoman who may not know about the IRW and Lake 25 Tenkiller -- 04:25 207</p>	<p>difficult to -- to conceptualize what -- you know, what it is that -- what the exact nature of the nonuse value is. And that -- and so I think that -- I think that somewhat makes it difficult to completely answer your question. 04:28 <b>Q</b> The NOAA -- the NOAA panel, I should say, did not raise a concern about aggregation of damages as you call it, did they? A It's not one of the guidelines that they put in there, and to me, this has been one of the issues 04:28 that is not talked about enough in -- you know, in the economics literature is to what -- what really goes into -- goes into deciding who counts from a economics perspective. There's obviously the legal issue of who counts, but from an economics 04:28 perspective, whose values are you going to try to measure. I think it's neglected in the literature, given its importance. <b>Q</b> Now, in the references set forth in Chapter 6.1 -- 04:29 A Uh-huh. <b>Q</b> -- of your report. A Uh-huh. <b>Q</b> There is a reference to a paper by Dunford, Johnson and West in 1997 called Whose Losses Count 04:29 209</p>



<p>1 <b>Q And did you give that presentation?</b></p> <p>2 A I did give that presentation.</p> <p>3 <b>Q Do you know how many times roughly you've</b></p> <p>4 <b>given the defendants' perspective at an NRD</b></p> <p>5 <b>conference? 04:50</b></p> <p>6 A The -- no, I really don't. I mean, this</p> <p>7 particular conference likes to use that terminology,</p> <p>8 and this is -- this year will be my third time at</p> <p>9 this conference, so certainly in terms of going to</p> <p>10 this conference, and they like to kind of use that 04:50</p> <p>11 shorthand. What I try to do when I give these talks</p> <p>12 is to go through and lay out what I think the</p> <p>13 economic issues are in a damage assessment and the</p> <p>14 ones that are going to affect a defendant, and</p> <p>15 issues that, you know, that they should be concerned 04:50</p> <p>16 about, and I've given a lot of different -- I've</p> <p>17 covered a lot of topics over the course of the three</p> <p>18 years in terms of what I've done under that rubric.</p> <p>19 <b>Q Let me hand you what's been marked as Exhibit</b></p> <p>20 <b>No. 11. Do you recognize this document? 04:51</b></p> <p>21 A I'm taking a look at it. Yes, I do. I was</p> <p>22 just -- okay. Yes, I do. This was the presentation</p> <p>23 from the -- that I gave, or at least a rough copy of</p> <p>24 it from the 2007 conference at Santa Fe.</p> <p>25 <b>Q When were you first retained by the defendants 04:52</b></p> <p style="text-align: center;">214</p>	<p>over the -- over the -- what is it, maybe 10 to 11</p> <p>month period. Somewhere in that ballpark, probably.</p> <p><b>Q Do you know how many hours you have spent on</b></p> <p><b>this case since January 5 of 2009?</b></p> <p>A I can give you a rough estimate anyway, if 04:54</p> <p>that's good enough. 350, roughly, between 350 and</p> <p>maybe 400, somewhere in that ballpark.</p> <p><b>Q How is the time of the three individuals who</b></p> <p><b>we talked about earlier, Ms. Mathews and the other</b></p> <p><b>two we talked about, how is their time handled in 04:55</b></p> <p><b>terms of billing?</b></p> <p>A It's -- we provide invoices that have hours</p> <p>for each person individually. We show Ms. Mathews'</p> <p>hours on our time sheet, even though she's a</p> <p>consultant, so we show her hours, too, but -- and 04:55</p> <p>then we have -- I don't know if we break it out by</p> <p>each person or whether we -- I haven't looked at the</p> <p>invoices in a while. Sometimes we just show in</p> <p>aggregate hours and sometimes we show hours per</p> <p>person and then an average and then the rates. I 04:55</p> <p>don't remember.</p> <p><b>Q But all of their time goes through the</b></p> <p><b>billing --</b></p> <p>A Oh, yes.</p> <p><b>Q -- for your firm? 04:56</b></p> <p style="text-align: center;">216</p>
<p>1 <b>to work on this matter?</b></p> <p>2 A Sometime last summer, in the summer of 2008.</p> <p>3 I don't remember specifically, somewhere June, July,</p> <p>4 maybe, somewhere in that ballpark.</p> <p>5 <b>Q And who first contacted you? 04:52</b></p> <p>6 A Jay Jorgenson did.</p> <p>7 <b>Q And in the summer of 2008, what was the</b></p> <p>8 <b>expected scope of your work?</b></p> <p>9 A There wasn't. When -- basically, when I was</p> <p>10 hired in -- basically last summer, I was asked to 04:52</p> <p>11 begin to just familiarize myself with the literature</p> <p>12 related to water quality, familiarize myself with</p> <p>13 various data that may exist in Oklahoma, and that</p> <p>14 was what I was asked to do.</p> <p>15 <b>Q What is your hourly rate on this matter? 04:53</b></p> <p>16 A Excuse me. I believe it's \$370 an hour, but</p> <p>17 it may be 375, somewhere, 370, 375.</p> <p>18 <b>Q And what is your hourly rate with respect to</b></p> <p>19 <b>giving deposition testimony?</b></p> <p>20 A It's twice that, so whatever -- be 750 if it's 04:53</p> <p>21 375 or 740 if it's 370.</p> <p>22 <b>Q And how about for trial testimony?</b></p> <p>23 A It would be three times.</p> <p>24 <b>Q How many hours have you spent on this case?</b></p> <p>25 A 400 maybe, 500, somewhere in that ballpark 04:53</p> <p style="text-align: center;">215</p>	<p>A Yes, everybody's time goes through my --</p> <p>Kristi Mathews does not have a separate contract.</p> <p>She's a subcontractor to me for this work, so her</p> <p>time shows up on my invoices.</p> <p><b>Q Do you have a sense as to how much your firm 04:56</b></p> <p><b>has billed on this matter to date?</b></p> <p>A 350, \$400,000, somewhere in that ballpark.</p> <p>MS. MOLL: Dr. Desvousges, I have no</p> <p>further questions. I thank you for your time today.</p> <p>THE WITNESS: Thank you. 04:56</p> <p>MR. DEIHL: I have no questions.</p> <p>MR. HIXON: No questions.</p> <p>VIDEOGRAPHER: This completes the</p> <p>deposition. The time is 4:52 p.m. We are off the</p> <p>record. 04:57</p> <p>(Whereupon, the deposition was concluded at</p> <p>4:57 p.m.)</p> <p style="text-align: center;">217</p>

<p>1 I, William H. Desvousges, Ph.D., do hereby  2 certify that the foregoing deposition was presented  3 to me by Karla E. Barrow as a true and correct  4 transcript of the proceedings in the above styled  5 and numbered cause, and I now sign the same as true 04:57  6 and correct.  7 WITNESS my hand this _____ day of  8 _____, 2009.  9  10 04:57  11 _____  12 WILLIAM H. DESVOUSGES, Ph.D.  13  14  15 SUBSCRIBED AND SWORN TO before me this 04:57  16 _____ day of _____, 2009.  17  18  19 _____  20 Notary Public 04:57  21  22 My Commission Expires:  23 _____  24  25 04:57  218</p>	<p>WILLIAM H. DESVOUSGES, Ph.D., 5-14-09</p> <p>CORRECTIONS TO THE DEPOSITION OF  WILLIAM H. DESVOUSGES, Ph.D.</p> <table border="1"> <thead> <tr> <th>PAGE AND LINE NUMBER</th><th>CORRECTION</th></tr> </thead> <tbody> <tr> <td>04:57</td><td></td></tr> <tr> <td>04:57</td><td></td></tr> </tbody> </table> <p>TULSA FREELANCE REPORTERS  918-587-2878  220</p>	PAGE AND LINE NUMBER	CORRECTION	04:57		04:57	
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<p>1 CERTIFICATE  2  3 STATE OF OKLAHOMA )  4 ) ss.  5 COUNTY OF TULSA )  6 I, Karla E. Barrow, Certified Shorthand 04:57  7 Reporter within and for Tulsa County, State of  8 Oklahoma, do hereby certify that the above named  9 witness was by me first duly sworn to testify to the  10 truth, the whole truth and nothing but the truth in 04:57  11 the case aforesaid, and that I reported in  12 stenograph his deposition; that my stenograph notes  13 were thereafter transcribed and reduced to  14 typewritten form under my supervision, as the same  15 appears herein.  16 I further certify that the foregoing 218 04:57  17 pages contain a full, true and correct transcript of  18 the deposition taken at such time and place.  19 I further certify that I am not attorney  20 for or relative to either of said parties, or 04:57  21 otherwise interested in the event of said action.  22 WITNESS MY HAND this 28th day of May,  23 2009.  24  25 KARLA E. BARROW, CSR  CSR No. 00113  219</p>							

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